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MONTHLY TRADE PUBLICATION

Established January, 1944

Published by

DANA CHASE PUBLICATIONS

360 North Michigan Avenue

Chicago 1

Telephone CENtral 6-1229

A trade publication devoted to the interests of the manufacturers of major home appliances and allied metal products. Covers plant facilities and manufacturing problems from raw metal to finished product, with special emphasis on metal finishing.

Free controlled circulation to management, purchasing, engineering and key plant personnel in companies intimately connected with the field covered. To others, subscription price \$3.00 per year. Foreign subscription price (U.S. funds) \$5.00 per year.

Editor and publisher, DANA CHASE. Associate editors, PROF. A. I. ANDREWS, PROF. R. M. KING, and MATT E. HEUERTZ.

Acceptance under the act of June 5, 1934, at Aurora, Illinois, authorized January 7, 1946.

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DANA CHASE PUBLICATIONS

PRINTED IN U.S.A.

MAY • 1949

Vol. 6 • No. 5

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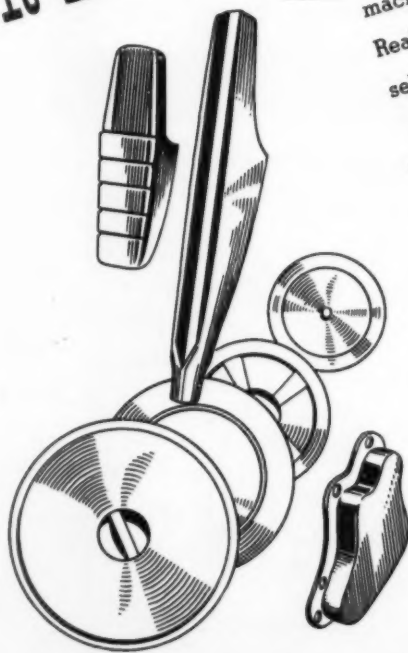
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For many years after the introduction of the washing machine, washday continued to be a day of drudgery. Real freedom from "Blue" Monday came only with the self propelled and more modern electric washers. New Monarch, throughout the years, has played an important part in the development of the washing machine as we have it today. By the engineering and re-designing of cast iron and wooden parts, enabling them to be made out of more durable steel stampings and at lower cost, New Monarch has done much to make the modern washer the practical, efficient and economical machine now to be found in countless homes. Today New Monarch is still producing high quality, precision stampings for many washing machine manufacturers.

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Extensively used as a frit opacifier for regular and acid-resisting dry process cast iron enamels . . . and for wet process antimony type sheet steel enamels.

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CLEATED CORRUGATED
BOXES OR CRATES

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1

EXPERIENCE

Since 1901 Ing-Rich has pioneered in porcelain enameling. We have learned a lot in that time—and our customers profit by it.

2

PLANT TESTING

Right in our own job enameling plant, under conditions of actual use, we use PORCELFRIT. When you get it, it's right.

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Ing-Rich uses unquestionably the world's finest smelting method, the result of exhaustive research and experiment.

5

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Now that we're back on a buyer's market, you have to watch your rejects. PORCELFRIT cuts them to a minimum.

6

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Our Service Engineers are available to make sure that PORCELFRIT works right for your product. You take no chances.

6

Good Reasons for Using PORCELFRIT

INGRAM-RICHARDSON Mfg. Co., of Indiana, Inc.

OFFICES, LABORATORY AND PLANT,

FRANKFORT, INDIANA

finish MAY • 1949



Cowles **AP CLEANER**

for
SPEED
and
ECONOMY



For fast, scientific, economical cleaning of steel before various finishing operations, use Cowles AP Cleaner. Designed for use as a heavy-duty direct or reverse (cathodic or anodic) electrocleaner, AP has high current carrying capacity and blankets the electrolytic tank to prevent gassing.

It is an efficient soak type cleaner for the preparation of steel before pickling, electrogalvanizing, barrel plating, enameling and painting.

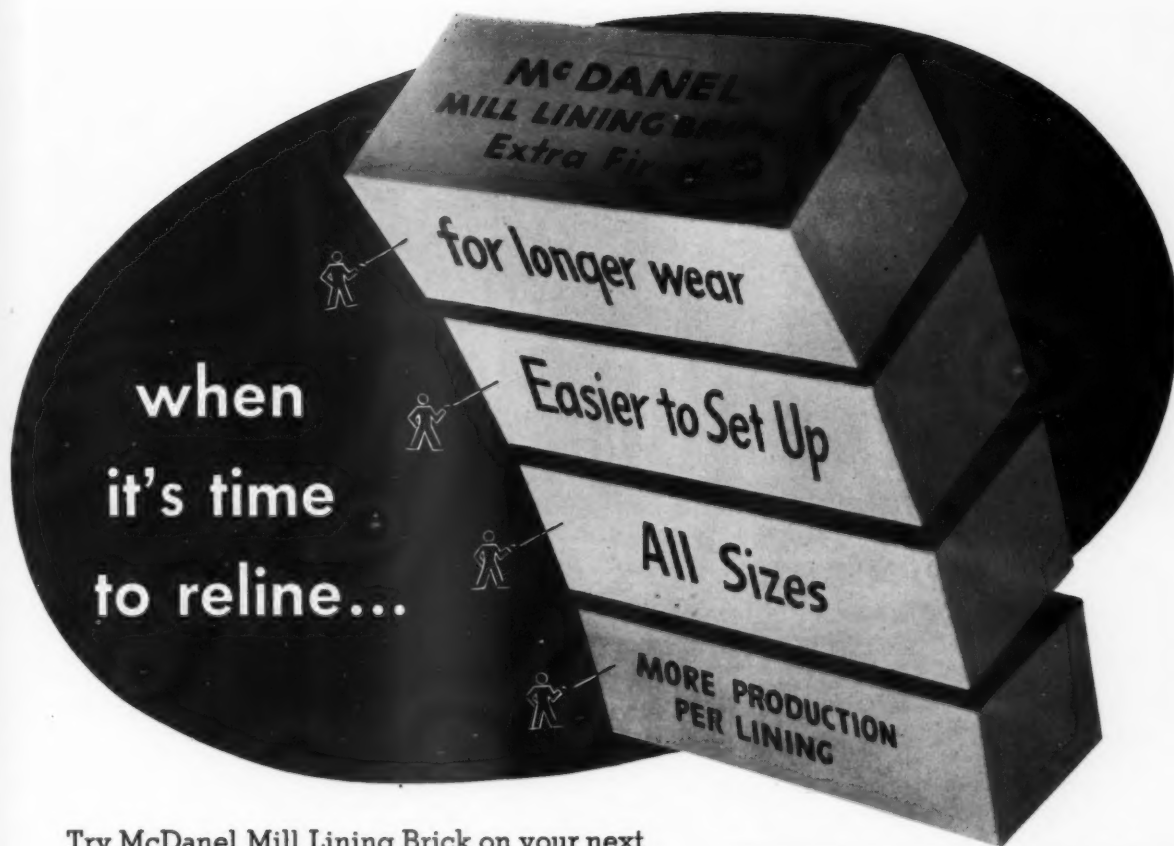
A trial drum will convince you.

Cowles Technical Service on Request

Cowles Chemical Company

METAL CLEANER DEPARTMENT

CLEVELAND 3, OHIO



Try McDanel Mill Lining Brick on your next relining job. Extra firing in their manufacture assures the complete vitrification that makes them tougher and longer wearing. Their longer service boosts production per installation—cuts expenses and downtime.

McDanel Mill Lining Brick come in a complete range of sizes to suit all mills and with McDanel Fill-In Brick they make the mason's work easier, speed up the relining job and get the mill into production quicker.

Next time, reline with McDanel and get a real "run" for your money.

• **HAND ROLLED GRINDING BALLS**

Made from specially developed vitreous porcelain body and hand rolled for faster, uniform grinding. Mill tested and individually inspected before shipment to you.

• **MILL LINING BRICK**

Low in glass content, McDanel Mill Lining Brick gives maximum resistance to wear and long, satisfactory service. Complete size range to fit every size mill.

• **MILL HEAD ASSEMBLIES**

Be sure to specify McDanel Mill Head Assemblies on your new mills. No metal can contaminate your mill charge with these patented covers. They are tops for uniformity of batch and long service.

• **METAL COVERED GRINDING JARS AND MILLS**

Protected with heavy gage steel jacket McDanel Metal Covered Grinding Jars and Mills are easy to handle, easy to clean, discharge rapidly and stand up under long usage.

West Coast Representative
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McDANEL

MILL LINING

BRICK

McDANEL REFRACTORY PORCELAIN COMPANY, BEAVER FALLS, PENNSYLVANIA

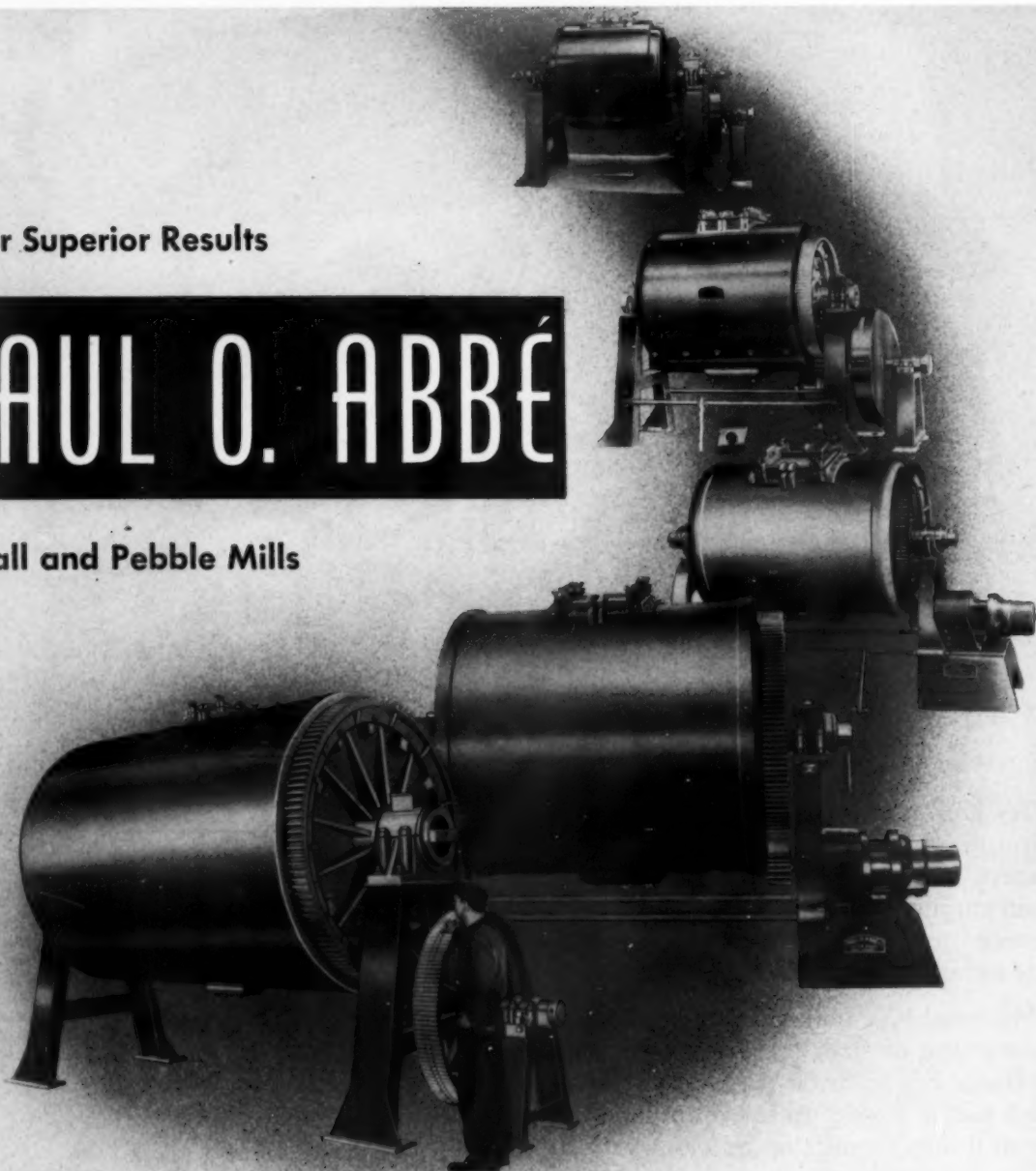
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Exclusive Representative for the Enameling Industry

For Superior Results

PAUL O. ABBÉ

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More than fifty years of experience in supplying efficient mills to many industries have produced the complete Paul O. Abbé line of Ball and Pebble Mills.

Types and capacities are included for all laboratory and production purposes from $\frac{1}{2}$ pint to 2000 gallons.

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377
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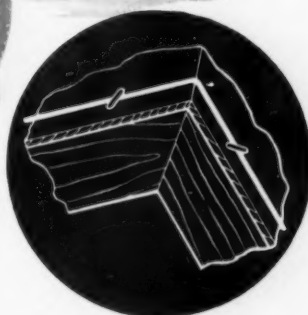
INC.

LITTLE FALLS,
NEW JERSEY

REDUCE BOX WEIGHTS UP TO 33%

CONSTRUCTION PRINCIPLES

WITH THESE



UPPER LEFT

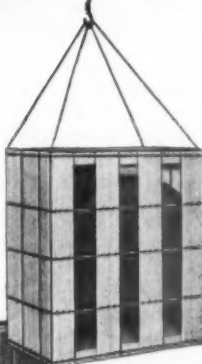
Wirebound staples are driven in cleats in such a way that the ends flare after entering the wood—increasing resistance to pull-out.

UPPER RIGHT

Cleats are mitered or tongue and groove, depending on product shipping conditions. Accurately cut and augmented with wire bindings, they produce tight joints to stand maximum abuse.

BELOW

Typical of the Wirebound weight reductions achieved for the boiler company is this 29½ lb. crate which replaced the 75 lb. box shown below.



Like so many other manufacturers, a well known manufacturer of heating equipment* found that Wirebound Boxes and Crates brought savings obtainable with no other shipping container! Box weights were reduced 33%; over-all shipping room savings were 25%; storage requirements were slashed 80%; container assembly and packing time were cut 50%.

Wirebound's unique construction principles will enable you to obtain similar benefits. Specifically designed for the product it is to carry, each Wirebound is composed of high tensile steel wires stitched to thinner wood for face material. Thickness of boards, arrangement of reinforcing battens and number and gauge of wires vary in accordance with the type and weight of contents.

This is only part of the Wirebound story . . . to learn all the advantages of Wirebounds use the coupon at right to request a copy of the free Technical Data Book or have a Wirebound sales engineer call to study your problems.

WIREBOUND BOX MFRS. ASS'N.

Room 1832, Borsland Bldg., Chicago 3, Illinois

☐ SEND COMPLETE LITERATURE

☐ SEND A SALES ENGINEER

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POSITION

FIRM NAME

ADDRESS

CITY

ZONE

STATE

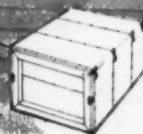
PRODUCT

60 WIREBOUND PLANTS THROUGHOUT THE UNITED STATES

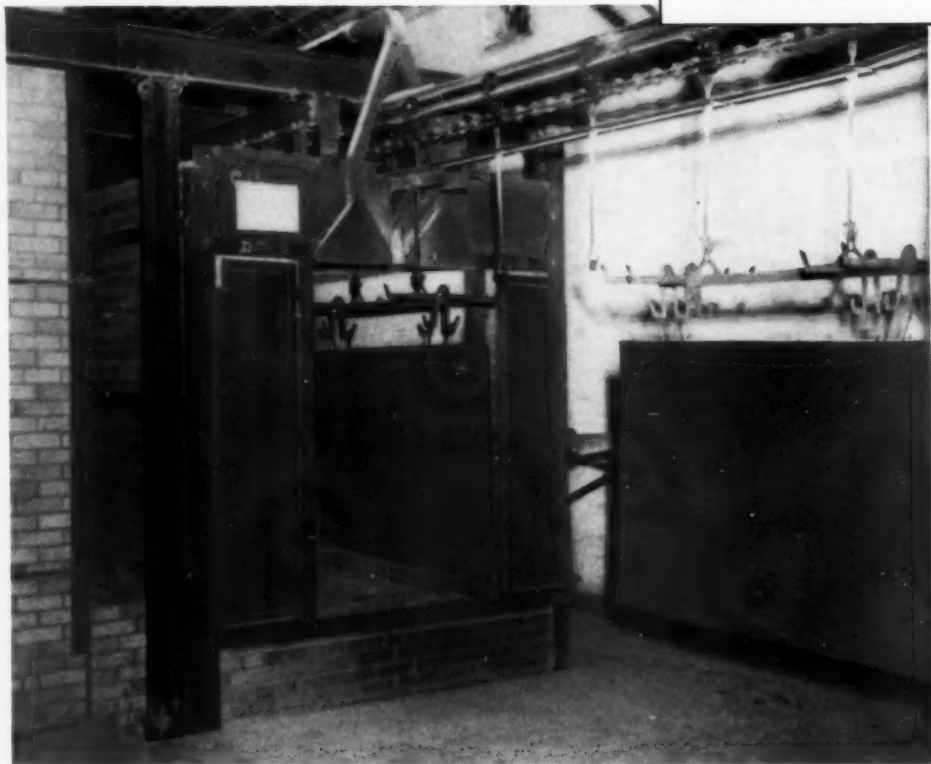
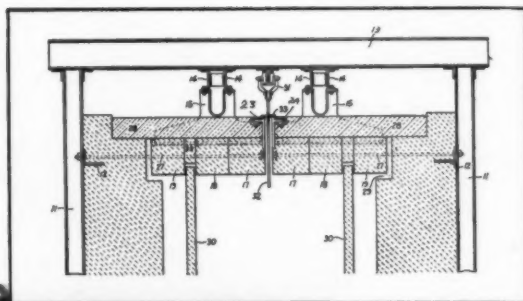
*Name on request

finish MAY • 1949

Wirebound
BOXES & CRATES



Only **BOLAND** Furnaces have
the **"FLOATING ROOF"**



The drawing above shows the patented "Floating Roof" construction which is standard with all Boland built continuous furnaces.

The patented "FLOATING ROOF" construction is sufficient reason for buying the Boland continuous furnace, for it represents one of the most important fundamental improvements in continuous furnace design. The roof is suspended from structural steel by "alloy" slot castings and "alloy" bracket castings. Built like "Gibraltar," this construction provides a permanently smooth slot for conveyor travel.

With the "FLOATING ROOF," warped furnace roofs, jammed conveyors and dirt from overhead can be forgotten.

Now add the advantages of "SINGLE FLOW" design, with wide conveyor turns located *outside* the furnace, and the expert designing and quality materials that go into *every* Boland furnace and reasons for the increasing popularity of Boland built installations are evident.

Our counsel on furnace needs is free for the asking. And you will find our bids on furnace construction attractive, when specifications are up for consideration.

ALBERT J. BOLAND COMPANY

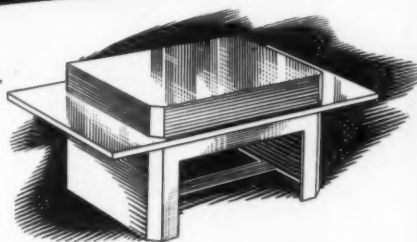
407 NORTH EIGHTH BUILDING • ST. LOUIS 1, MO.

Designers and Builders of Continuous and Box Type Enameling Furnaces



A CARLOAD of Vitreous Enameled Parts or a SINGLE Sample MODEL...

*You will be
pleased how
satisfactorily every order is filled*



Year in, year out, you can depend on our meeting your production requirements.

Carload after carload of porcelain enameled parts leaves our siding on the dates specified, properly packed for safe arrival.

The easiest, most economical way for you to develop a new porcelain enameled item is to have a preliminary talk with our engineers. Then send us prints and an order for a sample.

We are skilled in applying our 30 years of "know-how" to your problems to save you time and money. With our help, you can often make your product more beautiful and more practical for long, hard use.

Have you anything new on the drafting board with which we can be helpful?

*Plan...
for the Lifetime
Finish*

VITREOUS STEEL PRODUCTS CO.

BOX 1791, CLEVELAND 5, OHIO (Factory at Nappanee, Ind.)



It's a Pippin!

1400°-50° F NEOWITE

The acceptance and the field performance of 1400°-50° NEOWITE has been so outstanding that the trite expression "It's a pippin" is really descriptive of this finish. Here are the facts that make it best.

1400°-50° "NEOWITE" IS ACID RESISTANT—Here is an enamel that is equal in acid resistance to any titanium finish regardless of temperature range or firing time.

COLOR STABILITY IS IMPORTANT . . . It is a 1400°-50° "NEOWITE" advantage! This factor was definitely proved before a pound of 1400°-50° "NEOWITE" was ever put on the market. Not only does this new finish retain its color at one temperature but it can be depended on to remain a stable white over a wide firing range and on re-fire.

ECONOMY—What does a 100-degree drop in your firing range mean? First, there is the saving in fuel. A saving, perhaps, but not half so interesting as the important reduction of warpage and scrap. The economy of this alone is sufficient reason why 1400°-50° "NEOWITE" will contribute greatly to lowering production costs and increasing profits.

PEMCO'S 1400° - 50° "NEOWITE" is not a "prima donna" — 1400°-50° "NEOWITE" does not have to be coddled, for in addition to its low temperature advantages, it also possesses ALL the splendid characteristics of regular "NEOWITE", including one fire, alone or with Pemco's NEW 1400°-50° GROUND COAT. Nor is its application restricted to a particular finishing problem. PEMCO'S 1400°-50° "NEOWITE" is a GENERAL ALL PURPOSE enamel.

ADHERENCE—1400°-50° GROUND COAT — 1400°-50° "NEOWITE" — Starting with the ground coat we have yet to see a porcelain enamel finish with better adherence than either one of these new products. They are the tops.

CONTROLLED UNIFORMITY—FIELD TESTED AND APPROVED— A pound or a carload! Today—tomorrow—next month—it doesn't matter what the size of your order nor when it is to be delivered, every ounce will be the same UNIFORM quality . . . will give the same uniform performance . . . with the same high reflectance at low application weights, comparable to all Pemco continuous smelted frit.

Why not check on 1400°-50° NEOWITE today. Request samples for a production run . . . and you too will be convinced that 1400°-50° is sure a "pippin."

PEMCO CORPORATION
Baltimore 24,  Maryland

Always Begin With a Good Finish

THE Finish Line

Read "Household Ironer Campaign Proves Effectiveness of 'Ringing Doorbells'," on Page 52.

THE BATTLE OF THE FUELS — will be an interesting one to watch during the coming months with the two strong foes — electricity and gas — lined up in opposite corners with the full intention of fighting it out at both the national and local levels.

In this issue of *finish* you will find news reports on two important meetings, one on each side of the battle line. Matt Heuertz' report on the Edison Electric Institute meeting in Chicago shows that the electrical industry and electric appliance manufacturers intend to go all out in a competitive market to expand the use of electricity and electrically operated appliances in the home, with their target the "all-electric kitchen."

Your editor's report of the GAMA meeting at Colorado Springs shows an increasingly strong tendency for the gas industry, through the American Gas Association and the Gas Appliance Manufacturers Association, to coordinate their activity for most effective results through advertising, promotion and selling. The gas industry will attempt to make such terms as "CP" Ranges, "Flame of Freedom," "Court of Flame," and other promotion program slogans, by-words among the country's appliance buyers.

Electric ranges move up

A leading producer of electric ranges reports in this issue of *finish* that December figures, which have just been compiled, show that for the first time in history there were more electric ranges shipped by manufacturers than gas ranges shipped. "In other words," the report says, "the underdog, electric cooking, in a little less than 40 years' time has succeeded in throwing the giant, gas."

Then we read a quotation from a leading gas utility executive: "The gas industry is a growing, living industry. We are now serving more customers than at any time in our history — over 22 and 1/2 million households — a gain of 32% in the last ten years, and in addition, there are at least 4 and 1/2 million "LP" gas customers beyond our gas mains. Gas sales have increased 11.7% in the space of one year, and let no one think that we acquired this increased load by default . . ."

From now on, both industries will be slugging it out and manufacturers of products for both fuels, whether for heating, cooking, refrigeration, water heating or other home conveniences, will be putting every possible ounce of selling and merchandising effort behind their respective products.

It is expected that dollar-wise the electric appliance industry will spend more money in national advertising. There seems little question, however, that the programs of the gas appliance industry are sufficiently unified to gain maximum results for the dollars spent in advertising and promotion. At the present time, the electrical field has a definite advantage in its dealer publications.

The present stalemate in appliance sales

The present state of stagnation in appliance selling can be attributed largely to one weakness. This weakness is definitely at the dealer level, where it will be readily recognized that in most parts of the country today's dealers have not as yet instituted the hard-hitting, door-to-door, persistent selling methods that were common prior to the war.

Check your own community and we think you will find, as we have, that as yet no salesman for a refrigerator, washing machine, range or water heater, has been ringing your neighbors' door bells. A survey of appliance stores will show that to date there has been no general effort to assign salesmen for house-to-house canvassing.

With a prevailing situation of "over the transom" order taking among appliance dealers, it should not be surprising to any manufacturer that the demand for his products at the dealer level has dropped to a minimum. The day when the dealer and his salesmen can stand in the appliance store to await the line of incoming customers is definitely dead, but apparently the older appliance dealers are not willing to acknowledge it. Many new dealers have never had occasion to develop a selling force, or to know what is required to put the "pressure" on under competitive conditions.

It's the manufacturer's job

To place the responsibility on the dealers, where it rightfully belongs, and hope for the situation to right itself, would seem to present little hope to the manufacturer who would see his high production factory producing at top speed.

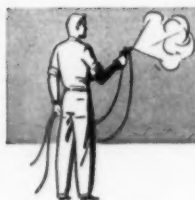
The job, therefore, resolves itself into one of education by the manufacturer so that dealers, new or old, will realize the type of selling that is required to make their business profitable, and in turn to provide a continuous market for the manufacturer.

We have been talking about sales training and dealer training over a period of many months. The catch is that the present situation calls for a lot more than conversation. Until the great majority of appliance dealers are convinced that they must have aggressive salesmen out "digging" for business to get reasonable turnover, we can see no possibility for today's high production plants continuously to operate on a profitable basis.

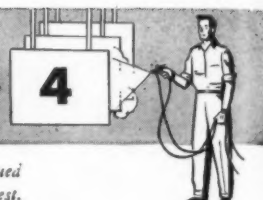
This problem will definitely not take care of itself, and the manufacturers who reap the earliest benefit from dealer training will be those who take the "bull by the horns" and do a bang-up merchandising job at the dealer level.

Dana Chase

EDITOR AND PUBLISHER



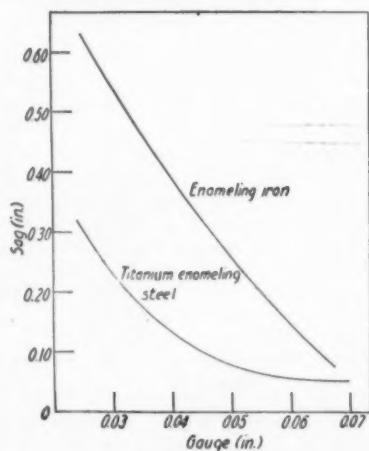
Enameler's Data Sheet No. 4



An informative series on titanium-bearing killed steel for the enameling industry. Issued monthly by Inland Steel Company. Reprints of all data sheets are available upon request.

TITANIUM ENAMELING SHEET STEEL OFFERS HIGH RESISTANCE TO SAGGING AND WARPING

One of the most important properties of titanium enameling steel, from the standpoint of both production economy and quality of the finished product, is its superior sag and warp resistance. This is particularly an advantage in applications where large, flat surfaces are involved. It



Sag-vs.-gauge curves for enameling iron and titanium enameling steel; sag tests made at 1600° F.

also makes possible the use of lighter gauges in many shapes subject to sag.

As can be seen by the accompanying curves, 18-gauge (.05-in.) titanium steel has practically no sag, whereas standard enameling iron of the same gauge sags 0.26 inches. 24-Gauge (.025-in.) titanium steel sags only 0.30 inches, whereas standard enameling iron sheets of the same gauge sag 0.625 inches.

The superior sag resistance of titanium steel is due to its higher transformation or critical temperature, and to its greater strength at enameling temperatures. As

is generally known, at transformation temperatures, there is not only a decided lowering of the tensile strength but also a rather abrupt contraction on heating and expansion on cooling, due to changes in the metal's internal structure. Mild steel has three of these critical points—occurring in the temperature range from 1330° F. to 1600° F. The transformation temperature of enameling iron is approximately 1600° F., whereas the transformation temperature of titanium enameling steel is 1700° F.—well above the temperature range for maturing standard enamels.

The coefficient of thermal expansion is an important consideration in warp resistance. The coefficients for titanium steel are quite similar over the temperature range 400° F. to 1600° F., whereas those for enameling iron and mild steel vary considerably, becoming higher with increasing temperatures. The rate of expansion for enameling iron and mild steel is so rapid above 1400° F. that data in this range are unreliable.

Production Results

In actual production, large panels made of titanium enameling steel—such as those for architectural use and large commercial refrigerators—stay exceptionally flat. Complicated shapes made of titanium enameling steel are produced truer to shape because of the metal's

more uniform coefficient of expansion and consequent higher warp resistance.

Because of its high sag resistance, lighter gauges of titanium steel can often be used. Savings of up to 20% accrue through lower cost per sheet. In addition, the lower weight of a titanium steel product results in lower freight charges.

Other Advantages

Titanium enameling steel can be white enameled without a cobalt-oxide ground

Coefficient of expansion $\times 10^{-6}$ (per °C.)

Temperature range		Titanium steel	Enameling iron	Mild steel
Fahrenheit	Centigrade			
200°—400°	93.3°—204.4°	10.08	8.82	11.16
400°—600°	204.4°—315.5°	13.50	14.22	16.02
600°—800°	315.5°—426.6°	15.30	15.48	16.02
800°—1000°	426.6°—547.7°	16.20	18.18	16.92
1000°—1200°	547.7°—648.8°	15.30	20.54	19.08
1200°—1400°	648.8°—759.9°	14.04	21.42	19.98
1400°—1600°	759.9°—870.8°	11.88		
80°—1400°	26.7°—759.9°	13.68	15.48	16.02

coat, resulting in lower costs and superior resistance to chipping. In addition, titanium enameling steel does away with fishscaling, has a good resistance to hair-lining, and has excellent drawing qualities.

Future Enameler's Data Sheets will further discuss the properties of Inland TI-NAMEL titanium enameling sheets.

If you would like additional information on TI-NAMEL, Inland's titanium-bearing killed steel, write today.

Inland Steel Company, 38 S. Dearborn St., Chicago 3, Ill.

SALES OFFICES: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

OTHER PRODUCTS: Bars • Sheets • Strip • Structural Plates • Tin Plate • Floor Plate • Piling • Reinforcing Bars
Rails • Track Accessories



INLAND TI-NAMEL

Reg. U. S. Pat. Off.

TITANIUM-BEARING KILLED STEEL ENAMELING SHEETS

Evolution of an enameling plant for electric range production

plus general information on fabrication, assembly, and handling methods
for the production of electric ranges

By *R. I. Goldthwaite* • CHIEF ENGINEER, RUTENBER ELECTRIC COMPANY,
MARION, INDIANA



The Rutenber Electric Company has recently expanded its porcelain enameling facilities to keep step with modern improvement in the art, and to meet the demands of increased production.

Our company is one of the oldest manufacturers of electric ranges and household appliances. Production of these items date back to 1912, when the company was located in Logansport, Indiana. In 1915, the company moved to its present location in Marion and soon became one of the country's largest producers of electric irons, toasters, and reflector heaters. During the late '20's more emphasis was placed on household electric ranges and, since this involved the use of porcelain enamel, it became apparent that a porcelain plant was a necessary adjunct to a stove factory.

The first porcelain plant was built in 1928. It was housed in a 60 x 80 addition and consisted of two 100 lb. mills, a line of pickle tanks, two spray booths, a 2½ x 3 x 4½ electric furnace, and a cabinet sand blast (for cast iron parts). In 1940, a 5 x 12 gas furnace was installed and the other facilities were expanded accordingly. After World War II, it was apparent that the plant was not capable of meeting the production needs or competitive costs, and it was decided to install a continuous furnace and more up-to-date methods of applying the slip and handling the ware.

Housing problem

for a continuous furnace plant

Our chief problem was how to house the equipment we wanted in

the space available and to maintain production during the expansion. We were definitely limited in space at the location best suited for the plant.

We chose a straight through furnace with combination gas and oil burners as best suited for our purposes. The conventional arrangement

of having the ground coat and finish coat lines feeding the furnace chain at right angles was obviously out of the question, so we worked out the layout which seemed most suitable for our purpose without sacrificing efficiency in the handling and moving of materials.

We have retained the conventional

The chassis for the electric range is formed in the spot welding department. Operator in the foreground has the first step in progressive welding setup, welding upright frame angles.

PHOTOS COURTESY MARION, INDIANA, CHRONICLE-TRIBUNE





Left: Sheet metal is cut to size on this large shear which accommodates sheets up to ten feet in length.



pickle line, transferring the ware from tank to tank in baskets handled by an overhead trolley. Our new pit will accommodate 4 x 8 tanks in place of the 4 x 5 tanks formerly used, and we are replacing the small tanks with large ones as they become unserviceable. The cleaner and neutralizer tanks are heated by gas, and the acid and nickel tanks by electric heaters.

All ground coat is dipped. The dip tank is equipped with a circulating pump and a magnetic separator. A reinforcing booth is located at the end of the ground coat dryer.

The fired ground coat is inspected as it is removed from the furnace chain, and is then placed on a transportation conveyor which carries it to the finish coat line. Those pieces which are to be finished in white are removed, stoned if necessary, and placed on the finish coat conveyor where it is sprayed, dried, brushed and hung back on the furnace chain.

Multi-purpose transportation conveyor

The finished ware is removed from the furnace chain, inspected and placed on the transportation conveyor again. Those pieces which require additional work are removed from this conveyor as it passes the finish coat line; those pieces which are OK are carried on to the assembly department, where they are removed and placed in racks adjacent to the location where they are used; rejected ware which requires special attention is removed from the conveyor as it passes the salvage department and is given whatever treatment is necessary



Left center: Following stoning and inspection, ground coated range tops are placed on wire rope conveyor entering cover coat spray booth.

Left: As stove tops leave finish coat dryer, they are brushed on the conveyor, and transferred to furnace conveyor.

Right: Photo shows range tops entering straight-away continuous furnace for firing of the cover coat enamel.

to enable us to refinish the piece and save it, or it is scrapped if it is considered uneconomical to try to rework it.

We considered pressurized booths and automatic spraying in our original plans and allowed space for such installation, but decided not to go in for these now because of possibilities opened up by the advent of electrostatic spraying and the characteristics of titanium cover coats which allow application by dipping.

The new building also houses the three ball mills used for grinding the frit, and a control lab with facilities to check all processes.

When the new plant was put into operation, the range assembly department was moved into the old porcelain plant. The steel shed which was originally built to house the gas muffle furnace is now the salvage department and contains the cabinet sand blast. The space formerly occupied by the range assembly is now utilized for processing that was formerly done in a more remote part of the plant.

The changeover is not yet completed, and probably never will be because of the new ideas always being developed in the industry, but we have definitely improved our finishing facilities and our product.

Range parts fabrication

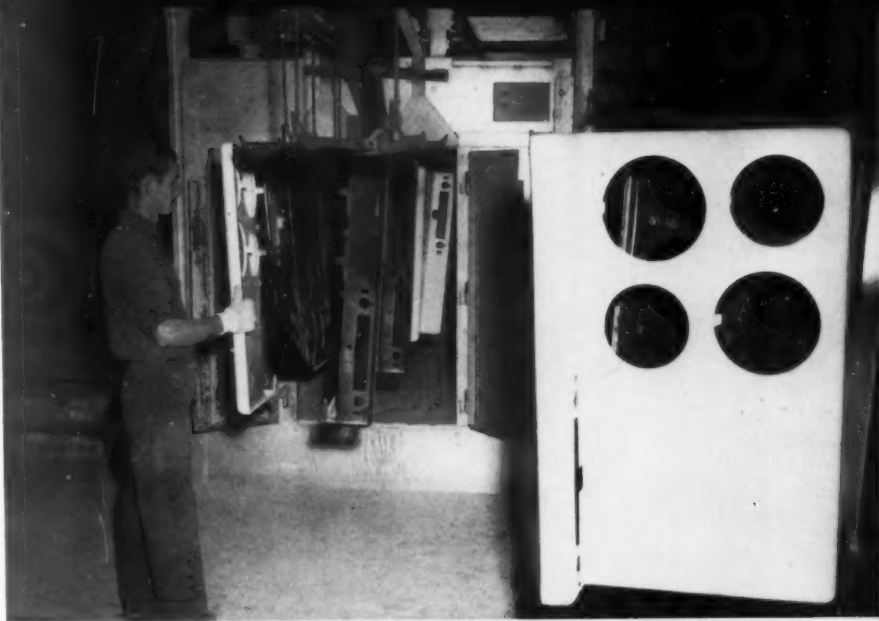
The company fabricates and finishes practically every part of the stove. The exceptions are electrical devices, such as switches and thermostats, wire goods, ceramics, hardware, etc. Enclosed type top units are manufactured within the plant.

Fabricating equipment includes

Right center: William Blake, left, vice pres. and gen. mgr., and J. P. Rogers, vice pres. and sales mgr., review plant production records.

Right: At this point on production line, inner wiring and oven insulation are installed. Oven doors are next.

finish MAY • 1949





Left: This photograph shows a section of sub-assembly department for small electrical parts and range wiring system.

square shears for sheets up to 3/16" thick x 10 feet long, presses from a bed area of 15" x 8" up to 72" x 36" and press brakes.

Steel is purchased in sheets, sheared to suitable sizes and blanked, formed, pierced, drawn, etc., in the press room. A tool room is amply equipped to make, maintain and repair dies, although most of the new tools are contracted for outside.

Construction routine

Construction of the range commences in the welding department where spot welders and acetylene welders assemble the various parts which are required on the assembly line.

Marion ranges are built by assembling porcelain panels to a welded angle iron frame. Frame construction progresses through spot welders and then to a dip tank where it is coated with a rust-resistant paint. It is then placed on the crate base and started on a roller conveyor where the assemblers assemble the various parts to the body. After completion, the range is inspected, tested electrically and crated. Finished ranges are spot checked for performance.

Besides the porcelain plant described, the company has a plating department with a full automatic machine for plating bright nickel, nickel

plating barrels, copper and chrome tanks.

Parts not suitable for porcelain or plated finishes are finished in high bake synthetic enamel. One of our goals is to eliminate this type of finish from our range.

Vapor degreasing used

A vapor degreaser has been found invaluable for cleaning parts prior to gas and spot welding. This process was so successful that at one time it was the policy to clean everything by this method prior to pickling, but improvements in cleaning and drawing compounds and careful treatment of all parts to be enameled have made

this practice unnecessary except on a few pieces.

The assembly of small parts such as oven elements, lamps and timers,

The Rutenber Electric Company, builders of "Marion" electric ranges, is strictly a locally owned concern. It is headed by G. A. Bell, a local industrialist and banker. The vice president and general manager is W. B. Blake, who has been with the company for 25 years. J. P. Rogers, formerly with Crosley and Farnsworth Radio, is vice president in charge of sales. W. F. Gernentz, who has operated porcelain plants for both Florence Stove and American Central (AVCO) is plant superintendent. Merse M. Murphy, Chattanooga, Tennessee, was engineer for the new plant layout.

etc., is done by groups in the portion of the plant formerly devoted to small appliances.

See plant layout . . . Pages 36 & 37



Right: The author is shown with a completed Marion range on the shipping crate base as it left final assembly line.

A method of centrifuging alkali cleaners in finishing plants

including information and data from an actual test over a period of months

By Philip P. Sharples • PROCESS ENGINEERING DEPARTMENT, THE SHARPLES CORPORATION, PHILADELPHIA, PA.

finish

In finishing plants using a 2-tank alkali system, it can be seen that the tank that bears the brunt of the cleaning job is the first alkali tank. Over a period of several months it loses more and more of its effectiveness, in spite of continued

additions of cleaner, until finally the contamination is so great that the bath must be dumped, cleaned out, refilled and recharged. This may prove to be an extensive cycle, for the labor involved is, of course, costly and, in most instances, valuable cleaning materials are wasted.

When discussing the condition of a cleaning solution, one generally considers three factors: (1) the strength of the solution in ounces per gallon, (2) the active alkali concentration, and (3) the total alkali concentration. Let us assume, for instance, that the solution is originally made up in the strength of 7 oz. per gallon. As the cleaner is used up, this strength drops. The evaluation of strength is made by titration against one normal sulphuric acid. From this you obtain the total alkali, and by further calculation the active alkali. To find the strength of the cleaner in ounces per

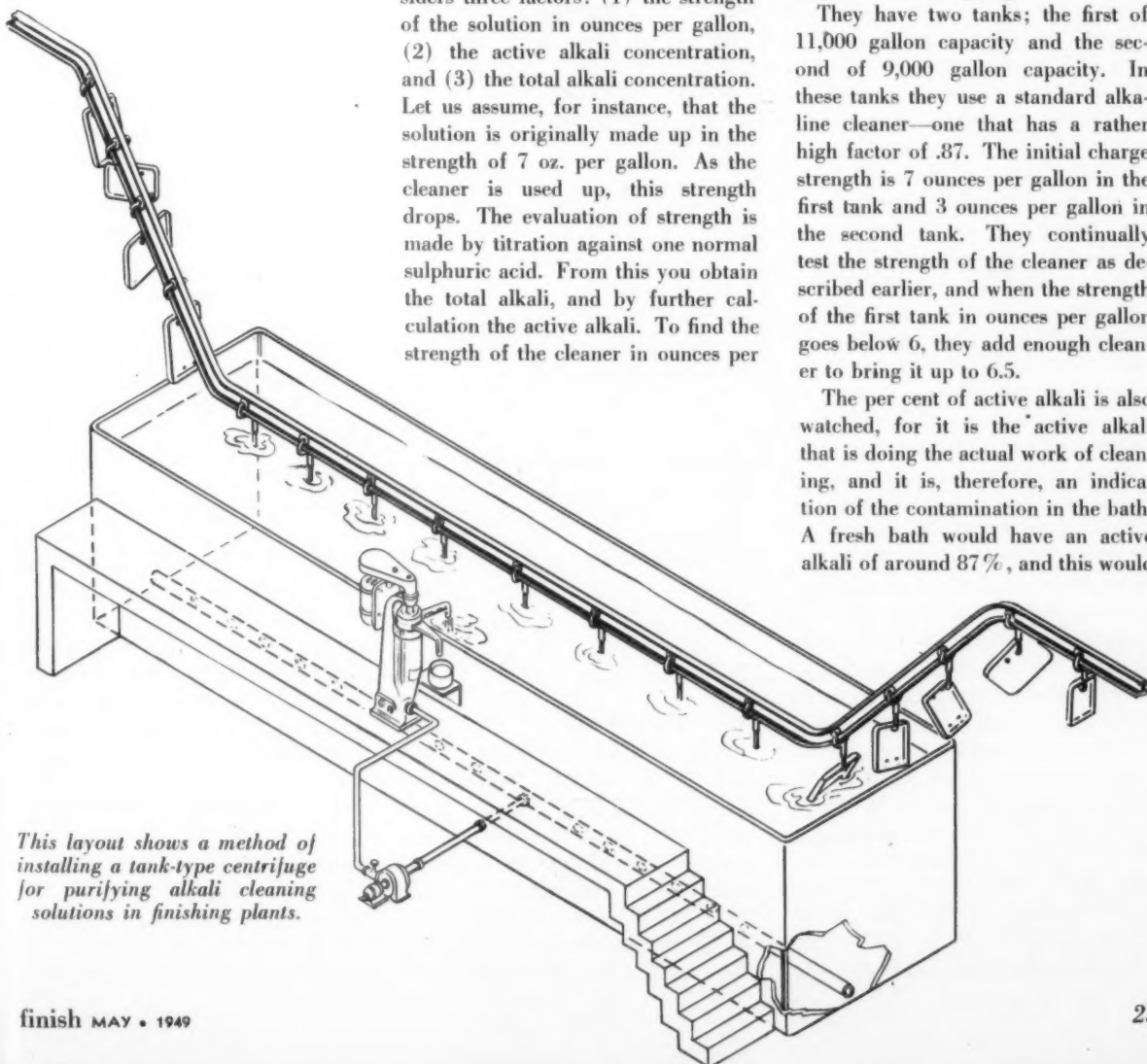
gallon, you multiply the total alkali by the cleaner factor.

A test case

Since tests were recently run at the plant of a large producer of household appliances on a method of increasing the life of alkaline cleaner baths, let us use actual figures concerning their cleaner tanks as an example of the foregoing.

They have two tanks; the first of 11,000 gallon capacity and the second of 9,000 gallon capacity. In these tanks they use a standard alkaline cleaner—one that has a rather high factor of .87. The initial charge strength is 7 ounces per gallon in the first tank and 3 ounces per gallon in the second tank. They continually test the strength of the cleaner as described earlier, and when the strength of the first tank in ounces per gallon goes below 6, they add enough cleaner to bring it up to 6.5.

The per cent of active alkali is also watched, for it is the active alkali that is doing the actual work of cleaning, and it is, therefore, an indication of the contamination in the bath. A fresh bath would have an active alkali of around 87%, and this would



This layout shows a method of installing a tank-type centrifuge for purifying alkali cleaning solutions in finishing plants.

drop steadily as the time went by. When the amount of cleaner added each month to keep the strength above 6 ounces per gallon became excessive (9,500 lb. in both tanks, for instance), or when the active alkali dropped much below 70%, the tank was dumped. The drop in active alkali is not used as a basis for dumping but is taken into consideration. This meant for this particular company that they would frequently dump at the end of four months.

A sample period

A sample period taken from 1947 shows the following situation. In July of that year both tanks were dumped and recharged with a total of around 7,000 lbs. of standard alkali cleaner. During August, 3,500 pounds of cleaner were added. During September, 6,500 pounds were added. During October, 7,500 pounds, and during November, 9,500 pounds were added. Then the tanks were dumped. During this 4-month period, active alkali dropped from 87% to 68%.

Needless to say, it was desired to reduce this cleaner usage and increase the bath life and effectiveness, if possible. Since the dirt which reduces bath life is comprised of contaminants such as drawing oils, grinding dust and grit, steel filings, fuzz and glue from grinding wheels, and dust and dirt which may be on the original sheet steel, it was felt that removing them from the solution would give the results desired. To do this job, a tubular type "super-centrifuge" was selected for trial. A separator-type bowl was chosen, for in addition to removing solid matter it was also desired to take out any oil that was getting into the bath. A tubular-type bowl was chosen in preference to a disc-type because, in addition to having adequate capacity, it will fit into smaller space, develop more centrifugal force for the removal of dirt, and be much easier and quicker to shut down, clean and bring up to speed. (The total cleaning cycle can be performed on this type of machine in 15 minutes, including slow down and start up time, compared to well over an hour for the disc-type of machine.)

Arrangements were made, through

the use of a web of piping, to pick up the solution from many points within a few inches of the bottom of the No. 1, 11,000 gallon tank. This solution was pumped by a centrifugal pump to the centrifuge, with arrangements for by-passing the excess feed-back to the tank. A pressure of 12 p. s. i. was found to give a flow of



A typical tank-type centrifuge for use on clarification of cleaning tank solutions.

approximately 500 gph through a $\frac{3}{8}$ " feed nozzle. This rate would turn the contents of the tank over in approximately 22 hours.

The feed to the centrifuge was 210° F., or nearly the same as the temperature in the tank. Lower feed temperatures obtained through the use of an intercooler were tried, but it was found that at any temperature below 170° F. some of the cleaner itself came out. At 170° F., the foaming tendencies were worse than at 210° F. Therefore, the figure of 210° F. was settled on.

Operating procedure

Once the system had reached equilibrium (the centrifuge was started up on a tank that was already 5 weeks old), about 1 pound of dirt was removed from the bath each 24-hour day of continuous operation. Since 12,000 gallons of liquid were put through the machine in that time—or roughly, 100,000 pounds—a

concentration of solids in the solution appeared to be one pound per 100,000. This was checked by laboratory analysis of a sample taken from the tank, and proved to be the actual case.

Thus, it could be seen that since there is only one pound of dirt in the bath at any time, the input of dirt must be equal to the removal rate of one pound per day—and no matter how fast the solution were to be put through the centrifuge, one pound a day would be all that could be taken out. The fastest rate of throughput, therefore, could only have the result of reducing the dirt to a concentration below one part per 100,000, which reduction could hardly show a profitable result.

The results which we were looking for should be evidenced in several ways. First, the dirt which we knew was in the bath should collect in the bowl. Second, the amount of alkali added to keep cleaner strength up should not be as large as it was before the installation. Third, the active alkali should remain higher. We did not expect to recover much oil, since in the particular plant where the test was being run a pre-washing system was being used for all parts. We also could not expect to reduce the number of rejects materially, since the company had practically none to start with, due to their unusually close control of the baths, and the general care exercised throughout the plant.

Test results

The centrifuge was started up on the 11,000 gallon tank, No. 1, on July 1, 1948, and, generally speaking, was run 24 hours per day from then on. The bath was 5 weeks old at the time of starting, as indicated earlier. During the month of June (before the centrifuge was used), 9,000 pounds was added to both tanks, an unusually high figure due to the tanks boiling over several times. Active alkali dropped from 83% to 78%. During July, 5,500 pounds was added. This dropped to 4,000 pounds in August, and 5,000 pounds in September. The active alkali had only dropped to 75% at the end of September.

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Objectives of the **SAFE TRANSIT** package testing program

**program for reducing shipping losses initiated by *finish* under sponsorship
of the Porcelain Enamel Institute now has industry-wide support by manufacturers**

A LONG with the steady rise in volume and value of shipments of finished appliances and allied metal products, there has also been an increase in claims for damage in shipment of these products. Conscious of the monetary loss sustained by both shippers and carriers because of this increase in claims, and of its potential threat to the existing good will among manufacturers, carriers, and customers, the Porcelain Enamel Institute is sponsoring an Industry Committee on Packaging and Shipping.

The basic objectives

The basic objectives of the PEI Safe Transit Committee are the development of a practical program for reducing damage to packaged finished metal products while in transit, and enlistment of the cooperation of the manufacturers of these products in putting such a program into operation.

The Technical Planning Division of the Committee has developed technical procedure and equipment for testing, before shipment, the ability of packaged finished metal products to withstand normal handling in transit.

Program has industry-wide support

The Committee's program has received the wholehearted endorsement of appliance industry organizations, and the following associations have official representatives on the Industry Committee:

- American Washer and Ironer Manufacturers Association
- Gas Appliance Manufacturers Association
- Institute of Cooking and Heating Appliance Manufacturers
- Enameled Utensil Manufacturers Council
- National Electric Sign Association

Enameled Cast Iron Plumbing Fixtures Association
Porcelain Enamel Institute, Inc.
National Electrical Manufacturers Association

The Committee has also been assured of the cooperation of the Association of American Railroads, the Railway Express Agency, Air Cargo, Inc., and The American Trucking Associations, Inc. These carrier organi-

Editor's Note:

The accompanying article is a summary of information published on the National "Safe Transit" Program in recent issues of *finish*. As further details of the program are available, they will be passed on to *finish* readers.

For a report on the presentation of the "Safe Transit" program before a group of packaging and materials handling engineers, turn to page 41.

zations have agreed to parallel the Committee's efforts with "safe-handling" educational programs among their employees.

Testing procedure

The testing procedure and equipment recommended by the Committee's Technical Planning Division was first adapted to large, packaged finished metal products such as home appliances (weighing over 100 lbs.) because these are the products involved in major shipping losses. Equipment and specifications covering the testing of smaller packaged products (weighing under 100 lbs.) were worked out as the second step of the project.

The recommended tests for determining the ability of packaged finished metal products (weighing over 100 lbs.) to withstand normal handling in transit are only two in num-

ber. They are the Vibration or Vertical Shock Test and the Impact or Longitudinal Shock Test.

The vibration test

The Vibration, or Vertical Shock Test, determines the ability of the container, interior packing, and the product itself to withstand vibrational shocks encountered during various means of transportation. The conditions simulated include resonance, flat car wheels, rail joints, rough road bed, and car side sway.

Equipment for this test consists of a table of suitable size and weight-carrying capacity, supported on eccentrics or cranks which are driven by shafts so as to give the table a circular harmonic, vibratory motion in a vertical plane. This apparatus should be capable of operation at variable speeds so that the various vibration frequencies experienced in transportation can be produced. Side rails and a low fence may be provided so that the packaged product under test will not creep off the table during operation. For simulating high stacking, which may be encountered in transportation, high fences may be used. The carriers have recommended that the vibration frequency be such that the PACKAGED PRODUCT is forced to momentarily leave the table at some point during the vibration cycle. Following this test, the product must be free from damage of any kind, and the container must be in a condition to afford reasonable future protection.

The impact test

The Impact Test determines the ability of the PACKAGED PRODUCT itself to withstand shocks and impacts experienced in actual shipment, and indicates whether or not protection of the product during transit is adequate. This test was

originally developed by the Freight Container Bureau of the Association of American Railroads, and is set forth in Specification D88046T, issued by the American Society for Testing Materials, Philadelphia, Pa. The test simulates the longitudinal shocks and impacts received in actual shipment by various means of transportation.

Equipment for impact test

Principal apparatus for the Impact Test consists of a two-rail steel track inclined 10 degrees from the horizontal, a rolling carriage or dolly, with a rigid bumper.

By means of a cable or winch, the dolly is brought to a pre-determined position on the inclined track, the PACKAGED PRODUCT to be tested is placed upon it, and the dolly is released, bringing its load into direct impact with the solidly-constructed wooden bumper at the bottom of the incline. The recommended test requires that this procedure be repeated so that each face and the bottom of the packaged product are subject to impact. After the test, the product must be free from damage of any kind, and the container must be in such condition that it will afford the product reasonable protection thereafter.

Shock recording device

A shock recorder made by The Impact Register Company, Champaign, Illinois, is the instrument recommended by the Committee for use with this PACKAGED PRODUCT test. This is considered to be the best instrument available for measuring and recording longitudinal impacts.

The Vibrational Test was approved by the Committee at a severity of "1 g" (*a factor representing both the frequency and the length of travel of the vibration*). This test is of one hour's duration.

Regarding the Impact Test, it was agreed that PACKAGED PRODUCTS released from the fifth zone of the inclined plane of the tester, with a separate test for each side and the bottom of the package, would have sustained hazards equal not only to

"normal" transportation but to handling in the manufacturer's plant, and in terminals ordering delivery.

Severity and duration of tests approved by carriers

In both cases, the severity and duration of tests were approved by the carriers on a tentative basis as simulating normal transportation and handling hazards and, in effect, have created specifications for what may later become a "certified" safe package.

An extremely simple testing procedure

Of major importance to product manufacturers are the simplicity and practicality of the testing procedures involved and the low cost of necessary equipment. Both tests can be readily employed by any company without the services of specially trained personnel or other out-of-the-ordinary considerations.

Second achievement in the "Safe Transit" program was the endorsement of the major home appliance associations and accompanying voluntary offers to urge adoption of the program throughout their memberships.

Remaining step in Project I

The remaining step in "Project I" of the program is its full adoption by individual finished metal product manufacturers and assemblers. This is being made as "painless" as possible, since the entire testing equipment is estimated to cost less than \$2000 if purchased from current makers. It can also be constructed from specifications by the individual producing plant if desired. The cost is so small that loss-savings should more than offset it within a few months, according to the Committee's estimates.

Role of independent testing laboratories in program

In addition, independent testing laboratories located near finished product manufacturers are being encouraged to install such equipment to assist small plants which do not care to invest in such an installation.

Necessary improvements in product processing, design, type of package, or methods of packaging or handling will remain the responsibility of the individual producer of finished products. *The program is strictly a voluntary one.*

"Safe Transit" ability of products can be revealed

The tests, as approved, have clearly demonstrated that they can reveal the ability of the PACKAGED PRODUCT to travel safely under today's transportation conditions.

Many PACKAGED PRODUCTS will undoubtedly be found entirely satisfactory. Other packaged products will be found lacking and will open up a new vista of development for both product and package designers interested in the finished metal product field.

Executive personnel of industry-wide committee

General chairman of the Safe Transit Committee is R. F. Bisbee, manager of quality control for Westinghouse Electric Appliance Division, at Mansfield, Ohio, who is a leading authority on the subject.

The Coordinating Committee, headed by Mr. Bisbee, includes a Technical Planning Division, headed by E. H. Shands, in charge of engineering and product development for Geo. D. Roper Corporation; an Education Division, headed by Dana Chase, publisher of *finish*, and with co-chairman C. B. Williams, of Ferro Enamel Corporation, and P. B. Fleming of Westinghouse; and a Secretarial Division, headed by Edward Mackasek, managing director of the Porcelain Enamel Institute.

The industry committee includes the official appointed representatives of all the major appliance and allied metal products associations listed previously. The complete committee also includes representatives of the carrier's associations and the packaging industry associates. All are working to reduce unnecessary losses to PACKAGED PRODUCTS and to produce what may literally be termed SAFE TRANSIT.

New west coast office building has porcelain enameled exterior



The exterior of this new building housing the offices of Independent Iron Works, Inc., Oakland, California, was covered with approximately 4000 square feet of architectural porcelain enamel.

ONE of the newest, most modern buildings in Oakland, California, was recently completed to house the offices of Independent Iron Works, Inc., located at Eighth and Pine Streets. A two-story structure with a total floor space of approximately 13,000 square feet, it contains the executive, sales, engineering, and general offices.

It was decided that a porcelain enameled exterior finish would be installed on the two street sides of the structure, not only for the sake of beauty but to provide a surface

with a long life, one that was easily applied, and one with a low upkeep. The entire surface is white with blue trim with the exception of the base course which has a dark grey marbled finish.

New trend in building design

The porcelain enameling was done by Ferro Enameling Company, of Oakland. The building was covered with approximately 4000 square feet of architectural porcelain enamel. The design work was by R. Emmett Wood, of Remmet Construction

Company, of Palo Alto, California. The installation is described as one of the finest of its type in the San Francisco Bay Region, and one that may start a new trend in building design in that area.

Independent Iron Works is one of the largest builders of steel service stations and has utilized porcelain enamel in this type of construction to a great degree and with much success. The company states that this success had a great influence on the decision to go to a porcelain finish on their new building.

Enameled artistry

By Merrie Virginia Fenton

IMAGINE an oil painting as brilliant as nature and of materials as strong as steel! And what an odd thing to use the oil painted replica of a popular scene or ocean view for a serving tray! How unusual to see the base of a table lamp a design of glazed oils! These accomplishments are the results of a fascinating hobby created by Mrs. Harriette Eggers, of Seattle, Washington.

Several years ago, Harriette Eggers started using enamel pastes, painting surrounding landscapes on steel which had been sprayed and fired in white enamel first. The enamel pastes were dried to a dull finish and then taken to a large industrial furnace and fired at 1550°. It was interesting to watch pictures brought from the fire, they almost seemed to have been done in tones of black. In the process of

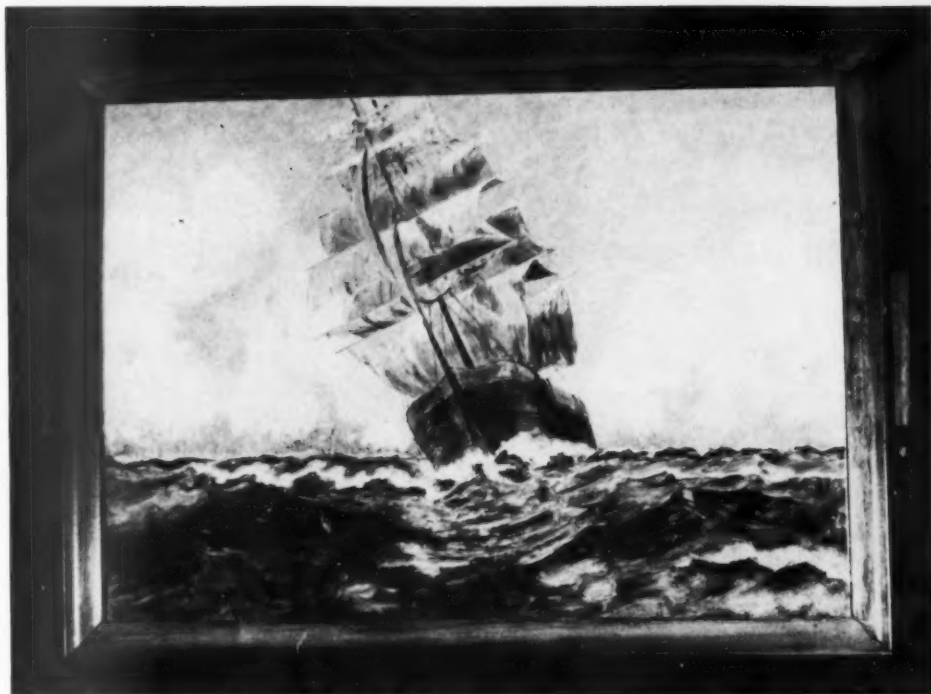


Above: In this enameled art work by Harriette Eggers, the bluebirds were painted in their natural blue color, with a yellow butterfly.



Left: The mallard ducks on the base of this lamp were painted in all their bright colors, with basic neutral green background with a natural color scene. It is impossible for black and white reproduction to bring out the rich tones and delicate shading typified in the original art.

Right: This serving tray, with a scene of an old-type sailing ship on the high seas, is non-breakable, withstands heat, and is easy to keep clean.



cooling, the brilliant colors gradually appeared. However, if some of the colors either faded out or changed with the one firing, a job of retouching and another firing was done. Her technique is much the same as if she were painting with oils on canvas, using camel hair brushes. The pleas-

ing effect of the detail work is very delicate and quite unusual.

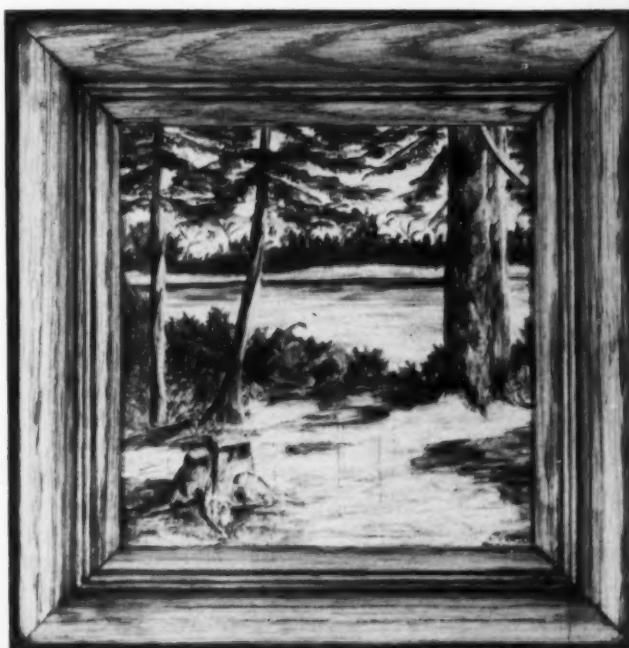
Harriette Eggers has dealt mainly with actual scenes in the Northwest, of lakes, forests, mountains and streams; some with birds, flowers and portraits. These pictures, trays, and lamps display a new type of en-

amel artistry of rich brilliant colors, a surface of gloss which emphasizes the depth of the design and yet creates a perfectly smooth surface. These enamel creations are easy to keep clean, non-breakable, and withstand heat. The art work is very professional and effectively done.

Below: For this still life work, Harriette Eggers painted the roses in deep reds, with shades of brown in the vase and background.



Below: This scene of a wooded shoreline of a lake shows the delicate detail work which can be achieved with enamel-on-steel.



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Gas appliance manufacturers

meet at Colorado Springs

REPORTED BY *Dana Chase*

Broadmoor Hotel, Colorado Springs, scene of GAMA 14th annual meeting. In the Broadmoor Ice Palace, the National Figure Skating Championship meet was held during convention week.



MANUFACTURERS of gas operated appliances and equipment from all sections of the United States joined with other leaders in the gas industry for a three-day session at the Broadmoor Hotel, Colorado Springs, Colorado, on April 5, 6, and 7. The event was the 14th annual meeting of the Gas Appliance Manufacturers Association.

H. Leigh Whitelaw, managing director of the organization, stated that the delegates, numbering over 200, represented more than 500 manufacturers of ranges, heating equipment, refrigerators, water heaters, clothes dryers, incinerators, meters, control devices and other gas appliances. Over fifty wives joined the male dele-

gates to take advantage of the delightful setting selected for the meeting.

It would appear that the gas men must have been leading unusually clean lives, or that they have some power over the weather man. From Monday through Friday the convention setting was bathed with warm sunlight which melted snow on the golf course, and made it delightfully comfortable for those who preferred to take a dip in the Broadmoor's heated pool or sunbathe inside its glass enclosure. In contrast to this, those of us who drove to Colorado Springs had dry roads through Nebraska, but roads that were walled in with snow resulting from a 12 to 16 inch snowfall around North Platte during the

preceding week. Then, just to prove that the good weather was just for the convention only, those of us who tarried until Saturday to leave faced a blinding snowstorm through western Kansas. This little weather report is for those delegates who traveled by train or plane, and who arrived and departed in line with the schedule for the convention business.

Members of the Program Committee for the meeting were: C. S. Stackpole, chairman, vice president of Airtemp Division, Chrysler Corporation, Dayton, Ohio; R. J. Canniff, sales promotion manager, Servel, Inc., Evansville, Indiana; D. J. Brogan, sales manager, The G. S. Blodgett Co., Inc., Burlington, Vt.; W. M. Couzens,





Hugh H. Cuthrell

general manager, Gaffers & Sattler Division, Utility Appliance Corp., Los Angeles, California; M. M. Scott, vice president, Ruud Manufacturing Co., Pittsburgh, Pa.

Most of the business of the convention was conducted in Division meetings, these divisions composing the various classifications of manufacturers according to the type of equipment or product produced. General sessions were confined to luncheon meetings, and the time immediately following, with the late afternoons and evenings set aside for banquets, dancing, and enjoyment of the many recreational facilities at Colorado Springs.

Frank J. Nugent, president of GAMA, and sales promotion manager, Bryant Heater Division, Affiliated Gas Equipment, Inc., Cleveland, presided at the general sessions and received many compliments for the quality of the entire program.

Accent on advertising and selling

Featured speakers at general sessions included H. H. Cuthrell, chairman, AGA General Promotional Planning Committee, and vice president of Brooklyn Union Gas Company, whose subject was "Par for the Course"; Robert W. Hendee, president of AGA, and president of Colorado Interstate Natural Gas Co., whose subject was "We Are All in it Together"; R. T. Killian, chairman of GAMA Marketing Committee, and



Frank J. Nugent

manager of Marketing Division and Research Department, Bryant Heater, whose subject was "The Broad Aspects of Marketing." The subject of traffic was covered under the title, "You Pay the Freight," by Charles C. Warwick, chairman, GAMA Traffic Committee, and general traffic manager of Rheem Manufacturing Co.

One of the highlights of the general session programs was termed "Operation Enterprise," which consisted of a dramatization of the complete activities of the Association, with special emphasis on advertising and selling.



Robert W. Hendee

There would be little room for doubt in the mind of any reporter that the subject uppermost in the minds of appliance manufacturers is "selling." There is full realization that to keep the wheels of industry turning, and to keep products moving from production lines, there must be new emphasis placed on all phases of merchandising.

A unified front

Expanded and intensified industry wide plans for reaching major gas appliance prospects throughout the nation which have been prepared to

to Page 62 →

These newly elected men take office in October. Left to right, they are: Whitelaw, secretary; Ruthenberg, vice pres.; Hobson, president; Van Norden, treasurer; Hess, 1st vice pres.



← **Convention snapshots**

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The third international

lighting exposition and conference

FOLLOWING the theme, "New Light on Planned Lighting," the 3rd International Lighting Exposition and Conference, held in Chicago at the Stevens Hotel, March 29 through April 1, outshone the two previous expositions with more varied exhibits, a greater number of stimulating addresses and lecture demonstrations, and the first Gallery of Lighting Merit Awards.

Sponsored by the Industrial and Commercial Lighting Equipment Section of the National Electrical Manufacturers Association, the Exposition was attended by some 7000 users of industrial and commercial lighting, including electrical contractors, wholesalers, architects and engineers, electric light and power men, students of electrical engineering, and utility personnel. More than 70 manufacturers exhibited their latest lighting equipment and accessories in the large exhibition hall.

In an address before the Conference, Eric Johnston, an officer in several corporations engaged in manufacturing lighting equipment, and president of Motion Picture Association

of America, Inc., stated "We are not going Socialistic as some of my friends seem to fear, instead I prefer to think we are living under what I term an 'Insurance Economy.' We have gone in for insuring our bank accounts; our home building; our stock issues; and now there is talk of Public Health Insurance."

Insuring our foreign investments

"I believe there are places where this Insurance Economy can profitably be extended still further, as in foreign trade. Our capitalists are not putting their money into foreign markets for fear of having their entire investment expropriated. I would have business and government join in insuring against extraordinary risks in foreign investment, as a help toward increasing our foreign trade. American Business' great responsibility is to spread the benefits of our American Capitalistic system to the greatest possible number," stated Johnston.

"The buyers are back"

D. M. Salsbury, vice president and chairman of the Apparatus and

Supply Division of the National Electric Wholesalers Association, and president of Westinghouse Electric Supply Co., told his audience that "There is one sure sign on the economic horizon today, and it proves the time has come for each of us in the lighting industry to unwrap our Planned Lighting package, do some studying, and get ready to sell harder than ever before. The economic signboard is pretty large and plain to read. The buyers are back again and they are saying 'Show me if you want to sell me'."

Two kinds of selling

Robert W. McChesney, president of the National Electrical Contractors Association, and president of Harry Alexander, Inc., emphasized that "In more and more contracting organizations, selling is getting attention on par with engineering. In industry efforts to assist in sales promotion by contractors, every effort is being made to develop a sound, long-range sales attitude. . . . There are two kinds of selling. One is selling regardless of the consequences of tomorrow. Get

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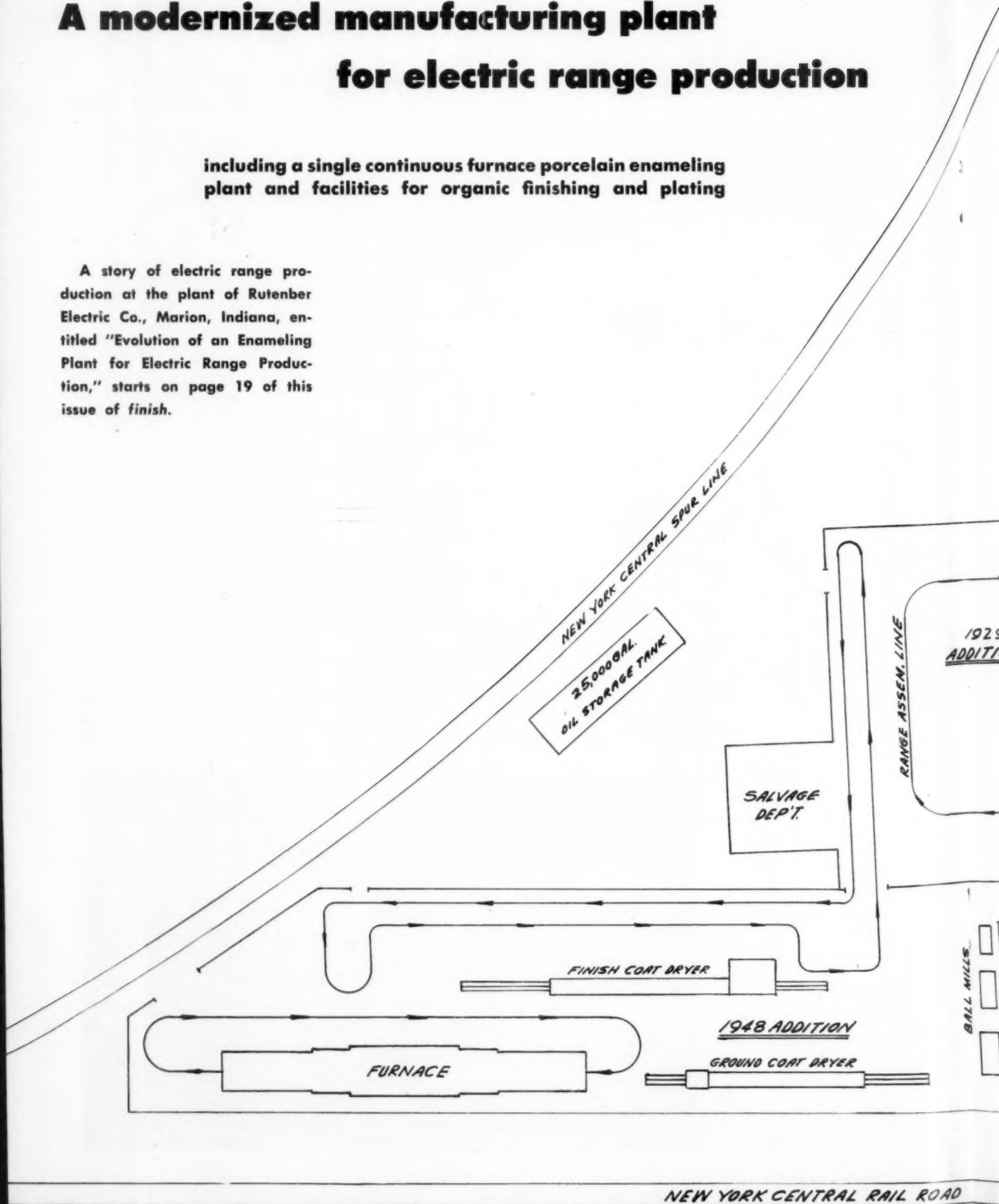
At opening ceremonies of International Lighting Exposition are (1) W. J. Donald, managing director of NEMA; (2) E. C. Huerkamp, of exposition operating committee; (3) R. W. Staud, chairman of publicity and attendance promotion committee; (4) L. E. Tayler, president of IES; (5) B. W. Clark, president of NEMA, in act of cutting the ribbon; and (6) G. T. Morrow, chairman, exposition operating committee.



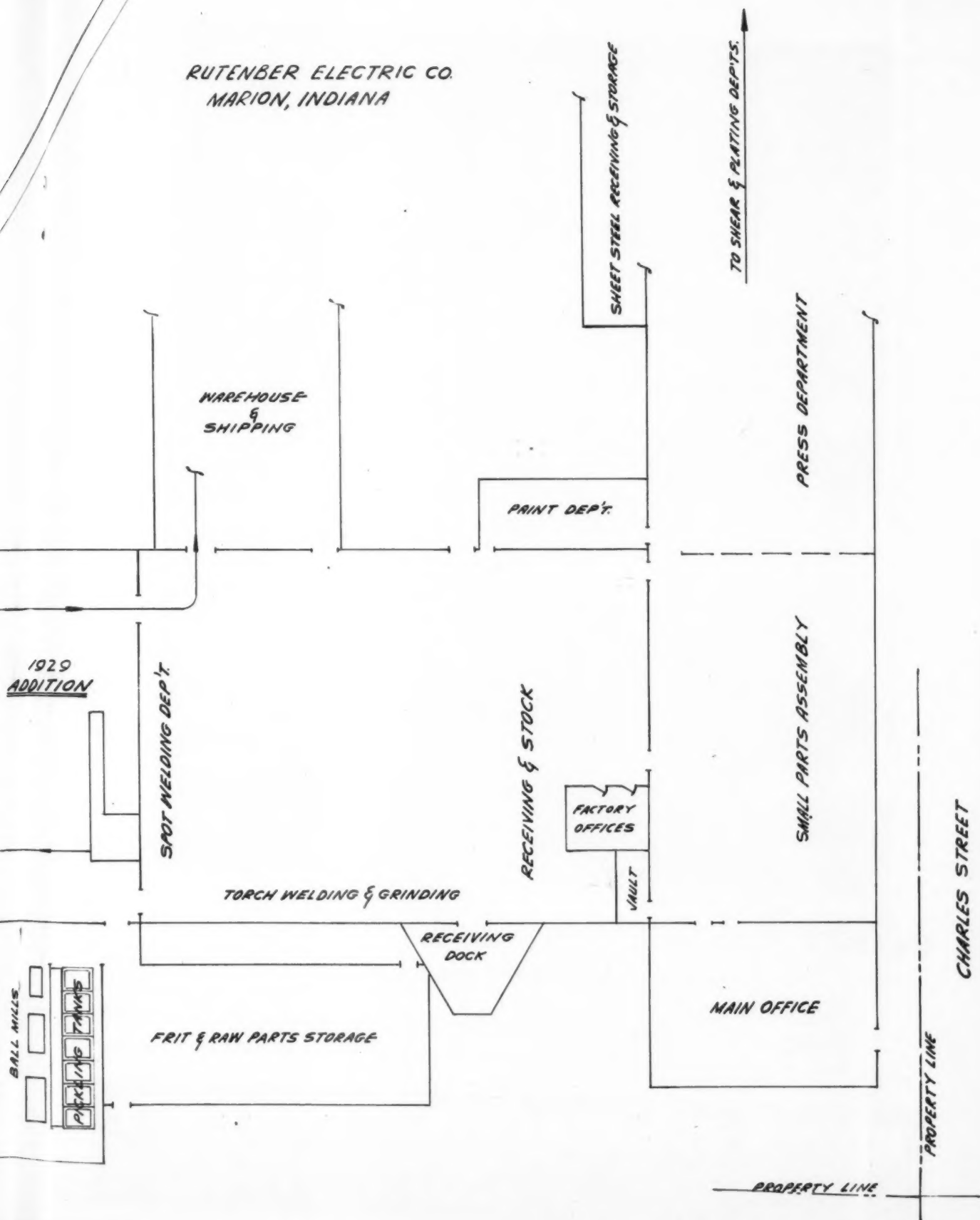
A modernized manufacturing plant for electric range production

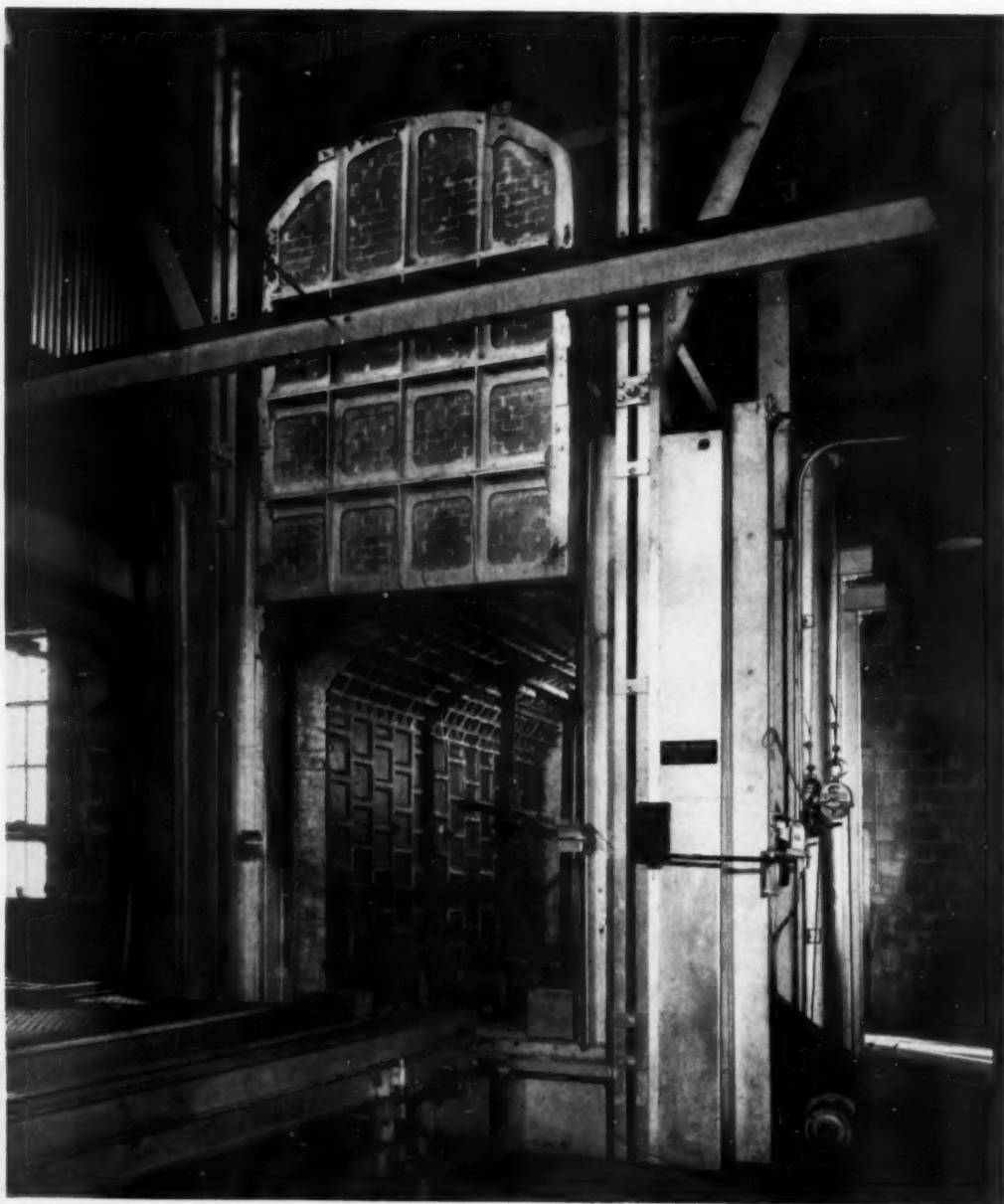
including a single continuous furnace porcelain enameling
plant and facilities for organic finishing and plating

A story of electric range production at the plant of Rutenber Electric Co., Marion, Indiana, entitled "Evolution of an Enameling Plant for Electric Range Production," starts on page 19 of this issue of finish.



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economical furnace construction and operation**

★ ★ ★ This furnace, built by HUYCK at Prentiss Wabers Products Co., Wisconsin Rapids, Wisconsin.
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Edison Electric Institute

fifteenth annual sales conference

REPORTED BY *Matt E. Heuertz*

IN THE opening address of Edison Electric Institute's 15th annual sales conference, held at the Edgewater Beach Hotel, Chicago, April 4-7, Harry Restofski, chairman of the EEI Commercial Division General Committee, optimistically declared that potential markets open to the electric utility industry "are so big as to dwarf those we have already sold and challenge our best sales efforts."

He cited the residential kitchen field as offering a potential retail market in appliance sales of over \$35 billion, with annual use of 165 billion kwh per year and electric service revenues of \$2 1/3 billion, a figure greater than the industry's total revenues from all sources in any single year prior to World War II.

"The size of the potential industrial market beggars the imagination," Restofski declared, pointing out that one industrial use of electricity, for melting steel electrically, offers a market for 44 billion kwh per year—amounting to over 35 per cent of all electricity used by large light and power customers in 1948.

"While potential markets are gigantic, they will not drop into our baskets like ripe plums," the speaker warned, stressing that the industry needs "rapid strengthening of sales planning and sales organizations for more aggressive selling. We must sell selectively and effectively in those markets that are most promising."

Movie on planned kitchens

On the first day of the conference, EEI members viewed "The Constant Bride," a 16 mm color movie, with a running time of 27 minutes, which was prepared by the Institute as part of its All-Electric Kitchen Program. Intended for showings by electric

utility companies to customer groups, the film tells a human-interest story. Its theme is an all-electric kitchen, and the advantages which a kitchen properly planned and equipped with modern electric appliances offers to the homemaker, such as freedom from drudgery and unpleasant tasks, extra free time and other benefits. Its story tells how a typical housewife secures a planned kitchen for herself despite husbandly opposition and her own lack of knowledge on how to start.

The film was prepared under the supervision of the EEI Electric Kitchen and Laundry Committee.

The appliance outlook

Before the EEI Residential Section, T. J. Newcomb, sales manager for the Electric Appliance Division of Westinghouse, cited the current transition

in the appliance field from a high production and sales volume down to a lower volume buyer's market. As a result, he stated, "there are bound to be casualties at all levels, especially at the dealer level."

The speaker pointed out that a recent survey by the National Electrical Manufacturers Association disclosed that there were 87,066 dealers handling electric refrigerators, about 2 1/2 times as many as in 1941. "With this number on refrigerators, alone," said Newcomb, "the over-all number of dealers must be astronomical. It is obvious that the industry cannot continue to support all of them."

Emphasizing the great need for education and sales training in home appliance merchandising, Newcomb stated that 42.8% of the population have had no adult experience with a peacetime economy. Furthermore, he

Shown below is a scene from "The Constant Bride," a full-color movie produced as part of the EEI Electric Kitchen and Laundry Committee's promotion program for "all-electric kitchens."



said, 44.4% of the population have had no adult experience with a free market for any consumer goods.

The home freezer market

Also speaking before the Residential Section, F. F. Duggan, chairman of NEMA's Farm and Home Freezer Section, and general sales manager of the Deep Freeze Division of Motor Products Corporation, discussed "The Utilities and the Home Freezer Industry."

Although it was born in 1938 without very much fanfare, "the home



E. R. Acker, EEI president

freezer is a new baby among the giants in the major appliance industry," said Duggan.

The speaker presented the following figures on home freezer sales: 1938-40, 50-60,000 units; 1946, 210,000 units; 1947, 450,000 units; 1948, 675,000 units. He estimated that the number of units in use as 1,400,000. "The public has been actually more sold on home freezers than has many large segments of the appliance industry," said Duggan.

"Salesmen representing our appliances have two basic selling jobs to do. They must first sell the need, and then sell the product," emphasized Duggan, pointing out that consumer education calls for demonstration of the product.

Basic business trends

"Our Expanding Economy — A Forecast of Basic Trends" was the title of an address given by W. V. O'Brien, general sales manager for General Electric's apparatus depart-

ment, before the EEI Industrial Power and Heating Section.

Refusing to take a gloomy view of present economic trends, O'Brien presented a picture of expanding



Harry Restofski, chairman of EEI Commercial Division General Committee.

American economy. The projected increase in sales of electric power during the next seven years will be 50%, and the generating capacity required to meet this sales demand and other power uses will amount to a 66% increase, said the speaker.

Among the many new developments in power use cited by O'Brien was a

roller-hearth furnace which turns out a metal surface, ready for porcelain enameling, in just one operation. The old pickling method required seven operations.

Vigorous selling — a must

In his address, E. R. Acker, president of Edison Electric Institute, and also president of Central Hudson Gas & Electric Corp., cited seven reasons why the power industry must engage in vigorous selling on a scale never matched before. "We must sell," he said, "in order to serve best the needs and wants of our customers, in order to grow, to make up for load mortality, to meet changing competition, to maintain reasonable profit levels, to assure a sound load balance among various classes of utility business, and in order to develop new markets."

Hughes electric promotion awards

The Southern California Edison Company, Los Angeles, received the first prize trophy in Class I, electric kitchen promotion, of the George A. Hughes Awards for its achievement in promotion of all-electric kitchens during 1948.

In Class II, Utah Power & Light Company, Salt Lake City, took first

to Page 70 →

L. C. Truesdell, center, of Hotpoint, presents 1st prize in Class III of Hughes awards to Fred Compton, of Detroit Edison. On left is H. M. Sawyer, chairman of EEI Prize Awards Committee. The awards, offered each year as a means of providing incentive and recognition for educational activities in electrical living, are named in honor of George A. Hughes, first president of the present Hotpoint, Inc.



Packaging engineers hear story of National SAFE TRANSIT Program

THE Northeastern Ohio Division and Miami Valley Chapter of the Society of Industrial Packaging and Materials Handling Engineers met at the plant of Westinghouse Electric Corporation, in Mansfield, Ohio, March 16, for a special combined meeting to hear the story of the National "Safe Transit" Program, which is now being coordinated by the Porcelain Enamel Institute, of Washington, D. C.

The program combined a trip through the Westinghouse plant, and a dinner, which was followed by the special program in the auditorium of the plant. The group was welcomed to Mansfield and to Westinghouse by C. L. VanDerau, Westinghouse works manager. W. B. Keefe, representative of the American Society for Testing Materials on the "Safe Transit" Program Committee, and packaging engineer for Westinghouse, acted as chairman at the meeting.

Among the well-known members of the Society of Industrial and Packaging and Material Handling Engineers who attended the meeting were:

Earl Candell, president, Northeastern Division; W. D. Long, president, Miami Valley Division; Charles Carney, Society managing director; and Joseph Singer, vice president of the Society.

R. Byers and J. Boehm, representatives of Wirebound Box Manufacturers Assn., P. F. Vandervort, representative of Fibre Box Assn., and W. Bolster, representative of Don Quinn Commercial Lab. and an observer for Watkins Container Manufacturers Assn., also were in attendance.

Included on the special program as spokesman for the "Safe Transit" Committee were C. D. Clawson, president of Ferro Enamel Corporation, and president of the Porcelain Enamel Institute; R. F. Bisbee, general chairman of the "Safe Transit" program, and manager of quality control of Westinghouse; C. B. Williams, of Ferro Enamel Corporation, and member of the "Safe Transit" Educational Committee; and Dana Chase, editor of *finish*, and chairman of the Educational Committee.

Another speaker was M. F. Weber, who heads up the Traffic Committee for the Institute of Cooking and Heating Appliance Manufacturers, and who is also cooperating with the Gas Appliance Manufacturers Association on traffic problems. Weber is with the Harvey (Ill.) Division of American Stove Company.

Pre-shipment program illustrated

Mr. Bisbee employed an illustrated presentation to show the simplicity of the two-test pre-shipment program for determining shipability of packaged products. Among the demonstrations used was the dropping of one edge of a crated range through an 8-inch space to the stage floor (the other edge forming a bearing point on the floor) to demonstrate that what many persons might term "normal" handling is sufficient to throw a shock recorder into the 5th zone. (The 5th zone is the maximum requirement for shock resistance, as measured on the Conbur Incline Impact Test equipment.)

See more photos . . . next page →

Group photo of packaging and materials handling engineers attending "Safe Transit" meeting in Mansfield, Ohio.





Left, l. to r.: Charles Carney, SIPMHE managing director; W. B. Keeffe, ASTM "Safe Transit" representative; C. L. Van Derau, Westinghouse works manager; C. D. Clawson, PEI president; and Ralph Bisbee, general chairman of National "Safe Transit" Program.

Left below: Officers of Miami Valley Chapter of SIPMHE are, l. to r.: R. W. South, H. E. Brill, W. F. Morgan and L. P. Hughes, all directors; R. M. Hindman, vice pres.; N. J. Downing, director; and W. D. Long, president.



See story on
preceding page.



Right above: Officers of Northeastern Ohio Division of SIPMHE are, l. to r.: Earl Candell, president; W. B. Keeffe, vice pres.; Wynn Utley, vice pres.; R. Carey, treasurer; Harold Jacobsen, vice pres.; and J. Kraus, secretary.

Right, l. to r.: Joseph Singer, national vice pres. of SIPMHE; Earl Candell, president of Northeastern Ohio Chapter of SIPMHE; W. D. Long, president of Miami Valley Chapter of SIPMHE; and R. Byers, representative of Wirebound Box Mfrs. Assn.



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The experience of users is a good yardstick for determining the worth of a product. Our Field Engineers report the following summarized statements from Superintendents in the Porcelain Enamel Industry:

TREOPAX Z "Very pleased with results...standardizing 100% on Z."

TREOPAX S "Doing a beautiful job on table tops and sinks."

TREOPAX Z "All white now being opacified with Z."

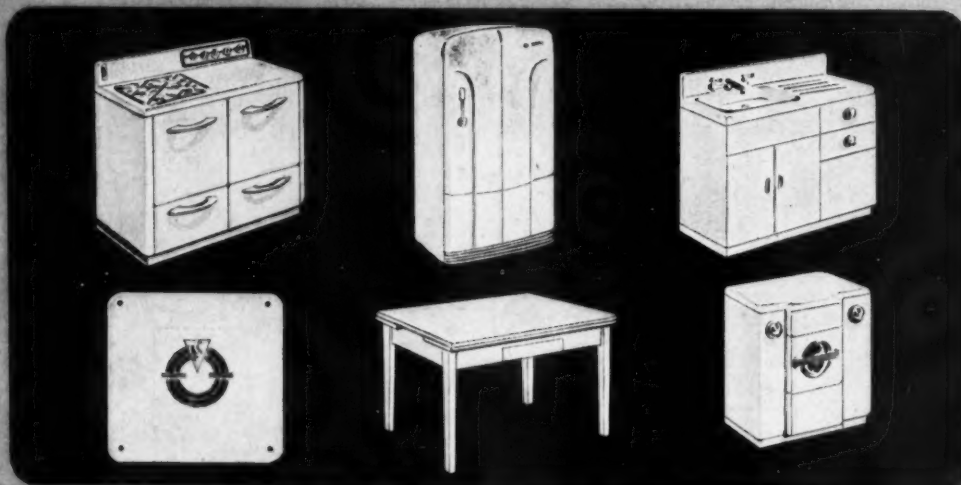
TREOPAX "Rates as the best opacifier made."

TREOPAX Z "Our standard opacifier in steel enamel."

TREOPAX Z "Giving excellent results in zircon enamel."

TREOPAX "Use being continued in cast iron and antimony AR."

Our field engineers are well equipped to discuss your problems. They can support their recommendations by laboratory data and by practical experience with shop conditions.



TAM

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NEWS

V. A. Harlow, Porcelain Enamel Company, announces the addition of Charles H. Becht to the organization. Mr. Becht (left) to industrial

Roper appointment

Geo. D. Roper Corp., Rockford, Ill., has announced the appointment of Albert J. (Bert) Holloway as ceramic engineer. He will be in charge of all processing of Roper's porcelain enameling operations.

Holloway recently spent two and one-half years with Ferro Enamel Corporation, working out of Ferro's Chicago office in sales and service. Previously he was with Cribben and Sexton Company for over twenty years, holding down various positions including enamel shop general foreman and enamel technician.

Third IBR short course

The third I-B-R short course on steam and hot water heating systems will be held at the University of Illinois, June 14-17, it has been announced.

Detrex Corporation has announced that it is extending the use of their trade name "Detrex" for identification of alkali cleaning compounds, strippers, emulsion cleaners, and wet spray booth materials that they manufacture.

Acme Steel appointment

Acme Steel Company, Chicago, has announced the appointment of W. S. Huss as sales manager of the company's southern division, with headquarters in Atlanta, Ga. Huss has been associated with Acme for 30 years, with the entire time devoted to selling and marketing. He re-

places F. H. Webb who retired from the firm on his 30th anniversary.

Bettinger executive appointed to Small Business Committee



Robert A. Weaver, Jr., president of Bettinger Enamel Corporation, Waltham, Mass., has been appointed an active member of the Small Business Advisory Committee of the Department of Commerce, by Charles Sawyer, Secretary of Commerce.

Weaver has been president of the Massachusetts firm since 1947. Chief products of Bettinger Enamel are porcelain enameled stove parts, signs, air markers, panels for Otis elevators, novelties, in addition to the manufacture of porcelain enameled store fronts and other architectural porcelain applications.

Commercial standards for cast iron plumbing ware

The Enameled Cast Iron Plumbing Fixtures Association is working with

the Department of Commerce on commercial standards with the purpose of establishing minimum standard specifications, definitions, types and sizes, inspection rules, and methods of testing which afford protection to consumers and promote fair competition.

Ceramic engineering inaugurated at University of California

Activity in ceramic engineering was started at the University of California at Berkeley during the present school year after many years of discussion with industry members and with the active support of the local sections of the American Ceramic Society and the State Division of Mines.

Organizational activities are progressing under the direction of Dr. Joseph A. Pask with the setting up of laboratories and proper equipment for fundamental research, testing, and instruction. Early emphasis is being placed on research work and graduate study. Projects are being planned and an active research program is expected to be in progress by the start of the next school year.

YS&T Chicago sales mgr. dies

Arthur Purnell, district sales manager in charge of the Chicago sales office of The Youngstown Sheet and Tube Company for 20 years, died April 1. He was a brother of Frank Purnell, president of the company.

National packaging exposition in Atlantic City, May 9-13

The 18th national packaging exposition and conference on packaging, packing and shipping, sponsored by the American Management Association, will be held in Atlantic City, May 9, 10, 11, 12 and 13, coincident with National Packaging Week.

At the exposition more than 200 manufacturers of machinery, equipment, materials, supplies and services will show their latest products.

A panel discussion on "Packaging and Packing for Successful Shipping" will include the following topics: "Export," "Bulk Products," "Heavy Products," "Container Quality Mea-

surement," "Container Performance Standards," and "Irregular Shapes."

A special continuous presentation of carloading and bracing techniques for both consumer and industrial goods will be held in the exhibit of the Association of American Railroads. The presentation will use operating scale models of railroad rolling stock.

MacDermid Inc. names head of new "Troxide" department



MacDermid, Inc., of Waterbury, Conn., has announced the purchase of the manufacturing and distribution rights of "Troxide" compounds from Waverly Petroleum Products Co., of Philadelphia.

Simultaneously, MacDermid announced that Thomas F. O'Brien, who formerly headed the industrial chemical division of Waverly, will take charge of a newly formed department to develop and promote "Troxide" and allied acid salt compounds for metal finishing and to assist in the development of new products. A metallurgical engineer, O'Brien was formerly associated with Philco Corp. and General Motors Corp.

U.S. Steel subsidiary to warehouse and sell aluminum

United States Steel Supply Co., warehousing subsidiary of U.S. Steel Corp. has added aluminum to its regular line of metal products, Leslie B. Worthington, president, announced.

Worthington said that arrange-

ments have been completed with Reynolds Metals Co. to handle its complete line of aluminum mill and building products in U.S. Steel Supply warehouses located in principal cities from coast to coast.

Store modernization show to select "best modernized store of the year"

Entries in the second national competition for the "Best Modernized Store of the Year" will be judged and exhibited during Store Modernization Week, at the 1949 Store Modernization Show, June 19-24, at Grand Central Palace, New York City.

More than 2000 Chambers of Commerce, civic organizations, and trade associations have been invited to enter the competition, according to John W. H. Evans, managing director of the Show. Some \$500 in prizes will be awarded the winners, selected by a

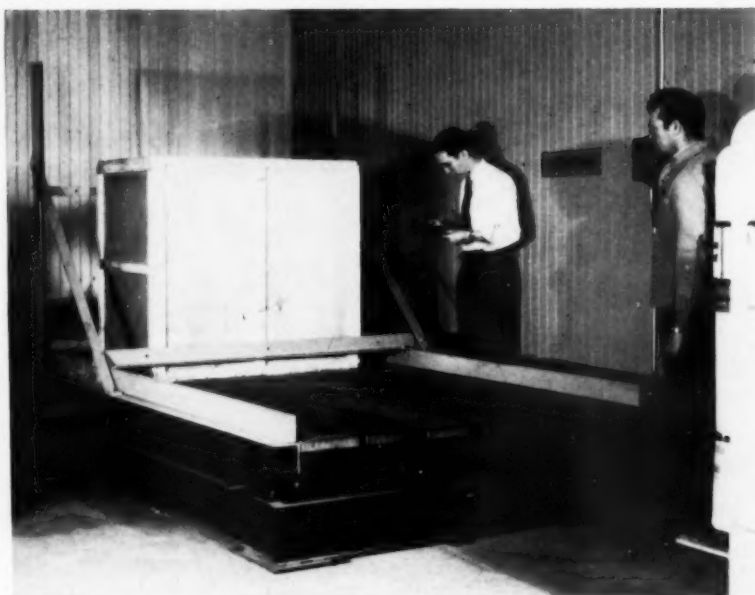
jury committee of the American Institute of Architects, headed by Morris Ketchum, Jr., author of "Shops and Stores."

Another feature of the Show will be daily clinics and forums at which experts will analyze the basic aspects of store modernization: store fronts, layout and traffic, lighting and color, displays and fixturing, and planning and budgeting.

Tinnerman establishes new division

Anticipating a large demand for its "speed grip nut retainer," Tinnerman Products, Inc., has established a new division and appointed Charles E. Pearson as coordinator of sales, production and engineering of the new product, according to George A. Tinnerman, vice president and general manager.

Container testing equipment at Atlas Plywood



New container testing equipment recently added to the Research and Design Laboratory at Atlas Plywood Corporation, located at Lawrence, Mass., includes a vibration tester. This apparatus, shown in photo, simu-

lates by eccentric action of the moving table, the rolls, thrusts and bumps of a moving freight car. Container engineers at Atlas can observe the condition of plywood boxes and/or contents while tests are in progress.

Binks appointments

Binks Manufacturing Co., makers of industrial spray finishing equipment and systems, has announced a

number of appointments in its sales and service organization.

J. J. Fink has been appointed to direct sales and service for Colora-

do, Kansas, Nebraska, Wyoming, Montana, and New Mexico; C. J. Rood, in Indiana; M. B. Scully, Iowa and northern Illinois; E. J. Cremer, Missouri and southern Illinois, B. R. Fulton, Ohio; J. J. Lynch, New England States; H. J. Dueno, Wisconsin, peninsular Michigan, Minnesota, North Dakota, and South Dakota.

Youngstown sales promotions



Lew E. Wallace

The Youngstown Sheet and Tube Company has announced the promotions of Lew E. Wallace to general manager of sales and Jay W. Owings to ass't general manager of sales.

For the past 16 years Wallace was manager of the company's New York office. In his new position he will have two assistants, Myron H. Watkins, who has been ass't general manager of sales for two years, and Owings, for the past two years manager of oil country tubular sales.

Wallace fills a vacancy created by the death of Charles H. Longfield, March 6.

February washer and ironer sales top January

Factory sales of standard-size household washers in February rallied over January, showing an increase of 17 per cent, totalling 208,500 units compared to 177,900 in January, according to industry-wide figures announced by the American Washer and Ironer Manufacturers Association. Ironers sold in Febru-

finish MAY • 1949

ary aggregated 28,250 units, compared to 28,000 for January.

New ASTE president

Robert B. Douglas, of Montreal, was elected president of the American Society of Tool Engineers at their annual meeting in Pittsburgh in March. Douglas is president of Godscroft Industries Ltd.

Shipments remain high for porcelain enameled plumbingware

The value of porcelain enameled steel plumbing fixtures shipped during the last quarter of 1948 increased approximately \$1.6 million, or 13 per cent, over the \$11.6 million value reported for the third quarter of last year, according to figures released by the Porcelain Enamel Institute.

Unit shipments of porcelain enameled steel bathtubs reported for the last quarter of 1948 increased by 21,000, or 24 per cent over the 82,000 units shipped during the previous quarter. Porcelain enameled steel lavatories shipped during the last quarter showed a unit increase of 26,000, or 61 per cent over the 42,000 units shipped during the third quarter.

Steel Kitchen Cabinet Institute promotes "quality tested" approval seal



A list of twenty-one tests covering the finish and the chemical requirements on steel kitchen cabinets is covered in a new folder issued by the Steel Kitchen Cabinet Institute to describe the tests behind the "Quality Tested" seal of approval.

Tests for finish included in the folder include tests for salt spray, and humidity; tests with vegetable or animal fats, and alcohol; and both impact and draw tests.

Mechanical tests include the application of weight to drawers, shelving and structural components, and wear tests for drawers, door catches, hinges, etc.

"All tests," it is explained, "are made in an independent testing laboratory. These accelerated tests are designed to show up any inherent weaknesses in a line of steel kitchen cabinets. Only when sample cabinets, taken right from a manufacturer's production line, have withstood all of the 21 tests is that manufacturer permitted to display the copyrighted seal of approval on his line of cabinets."

Ferro names southern manager



Ferro Enamel Corporation has announced the appointment of Edward L. McIlhenny as manager of their southern division, with headquarters at the company's new plant in Nashville, Tenn.

A chemistry graduate of Washburn College, Topeka, Kansas, and the University of Minnesota, McIlhenny has a background of 25 years experience in the metal preparation and finishing fields. He joined Ferro's Cleveland staff in 1945.

DuPont department head dies

William Richter, for 17 years head of the fabrics and finishes depart-

ment of E. I. du Pont de Nemours & Co., died March 20. He had served on the board of directors for 18 years.

Tinnerman Products, Inc. has moved its New York district office from 620 Lexington Avenue to new

and larger quarters at 75 Roseville Avenue, Newark, N. J., H. R. Russell, general sales manager, announced. Under the direction of R. M. Negley, New York district manager, the Tinnerman office serves northern New Jersey, northeastern Pennsylvania, New England, and all of eastern New York.

Hotpoint executive reports electric range shipments topping gas range shipments for first time

Electric cooking will outsell competitive fuels within five years, Leonard C. Truesdell, vice president of marketing, Hotpoint, Inc., told the Electric League of Western Pennsylvania.

December figures show that for the first time in history manufacturers shipped more electric than gas ranges, he said. "I feel that this marks a turning point in the appliance industry. Electric cooking has come of age."

Truesdell warned that teamwork among all elements of the electrical industry "is essential if we are to continue growing and progressing in the years ahead."

"I like to picture the appliance industry as a battle royal which began with the fight between the established champion — gas — and the underdog challenger — electricity," he said. "I am proud to report that December figures, which have just been compiled, show that for the first time in history there were more electric ranges shipped by manufacturers than gas ranges shipped. In other words, gentlemen, the underdog, electric cooking, in a little less than 40 years' time has succeeded in throwing the giant gas."

Truesdell said that as the new champion, electric cooking must be prepared to take on all comers. "And from where I sit, it looks as if the new challenger will be the liquefied petroleum gas industry."

"During the war when electric power generating expansion for residential use was stopped, when electric range production was practically nonexistent, four million LP gas ranges were sold and installed.

"If that doesn't wake you up, listen to this. In 1922 about 22,000 gallons

of LP gas were marketed. Last year the market for this fuel was 905 billion gallons. LP customers have increased from 5,000, in 1922, to more than two million."

Truesdell concluded that "in order to guarantee our future, we must

carry out a two-pronged educational program aimed at consumers and retailers. We must educate consumers to the advantages of electric living. We must have a strong, well-trained, retail organization that recognizes its full responsibility as a member of the electrical industry team.

"Our economy now has returned to the normal pattern of competitive selling. This is nothing to fear; rather it is a condition that many of us have felt would return sooner than it actually did. Now that all of our industries are producing abundantly we must return to selling and creating demand with the same resourcefulness and aggressiveness that we considered normal before the war."

Maytag introduces new automatic washer



On April 23, the Maytag Company, Newton, Iowa, introduced a brand new automatic washer to supplement the company's line of household appliances. The company reports that the conventional type of Maytag washer continues to roll off the assembly line at the original Maytag plant in Newton. Other products distributed by the company are ironers, Dutch

oven gas ranges and home freezers.

For the production of the new automatic washer, Maytag built a new factory at Newton at a cost of more than five million dollars. In a location that was a cornfield less than a year ago, the new multi-million dollar modern manufacturing plant is now in operation.

For those who may be questioning

the free enterprise system, it would be interesting to note that the Maytag Company was founded in 1893 by the late F. L. Maytag and three associates whose assets were, according to their own assessment: "four ambitious men, a workable idea, \$2400 in capital, and an abundant fund of confidence in the future of America."

In February, 1927, Maytag produced its 1-millionth washer. Five years later, in 1932, it produced the 2-millionth Maytag; in July, 1936, it produced the 3-millionth; and in May, 1941, the 4-millionth washer rolled off the assembly lines. Following return to normal operation after the war, the company produced its 5-millionth washer in October, 1947. With the new Maytag automatic, the company is placing a new challenge in the field of home laundry equipment.

Of interest to enamellers is the fact that the inner perforated tub is finished in 2-coat white porcelain enamel, while the tub basin, which catches the water spun in front of the tub assembly and carries it to the drain, is finished in ground coat porcelain enamel.

"Resistance Welding Institute"

Establishment of The Resistance Welding Institute, an educational organization for the dissemination of information on technical advances in resistance welding, has been announced. Simultaneously, announcement was made of the appointment of Lee H. Judge, industrial public relations executive, as director of the Institute with headquarters at 519 C. T. S. Building, Cleveland, Ohio.

Sponsored by a number of companies interested in resistance welding, the Institute has been created to make available to industry up-to-the-minute facts on spot, seam, flash and projection welding, it was stated.

Major equipment installation firm to serve western states plants

Rising demand in the metal and other industries in the west for trained specialists capable of installing major equipment for any type of plant is the explanation given for the

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recent organization of MacMen, Inc., Los Angeles, experts in machinery setting and industrial piping.

A. F. Menke, partner of MacIsaac and Menke Co., general contractors, and treasurer of MacMen said the new firm is operating throughout the western states with well equipped, highly trained crews and has assumed all installation contracts held by the other company.

Book on teamwork in business and industry

"Training Employees and Managers for Production and Teamwork"

is the title of a new book published by Johnson & Johnson, New Brunswick, N. J. It is pointed out that training within industry is the solution to the indifference, inefficiency and lack of teamwork which exists in some offices and shops today.

AGA production and chemical conference, May 23-25

The annual production and chemical conference of the Technical Section of the American Gas Association will be held in New York City, at Hotel New Yorker, May 23, 24 and 25.

Briggs exhibits at home builders show



Among the exhibitors of porcelain enameled home furnishings at the 24th convention of the Home Builders Association of U.S., held recently at the Stevens Hotel, Chicago, was Briggs Manufacturing Co.

The photograph shows a section of the Briggs exhibit in which colored Beautyware plumbing fixtures were

highlighted. The center section of this section of the exhibit revolved to show more than one lavatory treatment. A part of the exhibit not shown in the photograph had a mechanized unit showing two plastic figures representing journeymen plumbers who were raising and lowering a bathtub.

Million dollar automatic gas water heater campaign is launched

The Gas Appliance Manufacturers Association, in cooperation with 23 manufacturers, is currently engaged in "The largest advertising campaign ever run in national publications, featuring automatic gas water heaters exclusively," according to a sales promotion and advertising portfolio now in the mails for leaders in the gas appliance industry. GAMA estimates that 18,000,000 advertising messages in these publications are "telling the story of the modern automatic gas hot water service and selling the ad-

vantages of top-grade, adequately sized automatic gas water heaters," the portfolio says.

The sales drive, featuring the "Court of Flame" sales contest, with two Buick super sedans as first prizes, and \$62,850 in U.S. Savings Bonds as other prizes, also will be pointed up in American Gas Association national advertising, national advertising of the sponsoring manufacturers, and in newspaper and point-of-sale advertising.

More news on Page 52 →



Westinghouse

in porcelain enameling

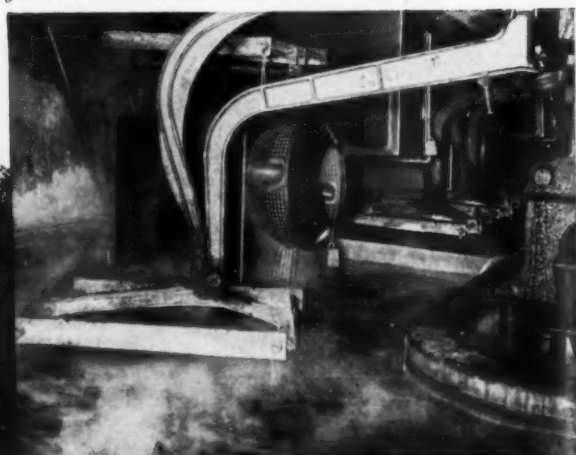
gets fewer rejects

higher uninterrupted production

lower cleaning costs

Pennsalt Metal Cleaners

*Liners and Laundromat parts emerge
from Pennsalt Cleaner solution.*



It's a tough assignment for a metal cleaner to thoroughly clean mill oils, drawing compound and other soils from steel stampings and other steel parts prior to enameling. Especially since all parts must be 100% chemically clean. That's why the Westinghouse Mansfield, Ohio plant has used Pennsalt Cleaners for over 10 years. These quality metal cleaning compounds have proved most successful . . . a minimum of rejects and at lower cost!

In the Westinghouse multi-step cleaning process prior to enameling, Pennsalt* 45X and Pennsalt* 34 metal cleaners have done such a fast, efficient job that around-the-clock production is possible . . . with production uninterrupted by shutdowns for re-charging or rejects.

Satisfactory cleaning like this is being enjoyed all over the country by plants using Pennsalt Cleaners. Call in your Pennsalt representative. He'll be glad to discuss with you savings of time and money with Pennsalt's complete line of metal cleaners. Special Chemicals Division, Pennsylvania Salt Manufacturing Company, Philadelphia 7, Pa.

*Reg. U. S. Pat. Off.

*Cleaned parts now ready
for porcelain enameling.*



PENN SALT

*chemical cleaning
compounds*

Thomas D. Hudson, assistant purchasing agent for American Steel & Wire Co., was elected a vice president of the sixth district of the National Association of Purchasing

Agents at a meeting held in Cleveland, Ohio, recently. The Association has a vice president serving each of its nine districts.

Diversey adds to field service staff



The metal industries department of The Diversey Corporation, Chicago, has announced the addition of five men to its staff of field service engineers. The men recently completed an extensive course of technical

training covering all phases of surface preparation and metal finishing. Left to right, in the photo, are: A. J. Crouch, P. M. Saxman, W. H. Murphy, E. F. Manning, and E. V. Hall.

Household ironer campaign proves effectiveness of "ringing doorbells"

Leaders in the household ironer industry, conferring at the end of a test promotion campaign just conducted in Decatur, Illinois, agreed that there was nothing wrong with their business today which "ringing doorbells" could not cure.

"Our two weeks' joint drive proved that all you need to do to make money these days is to work," said W. R. Dabney, chairman of the Ironer Division of the American Washer and Ironer Manufacturers Association, and vice president of Ironrite Ironer Co., Mt. Clemens, Mich.

One dealer announced that he had sold as many ironers in the two weeks as he had in the preceding year. Most retailers expressed themselves as being well satisfied with results. Some of them said that they expected to be closing sales, as a result of developing ironer prospect lists during the campaign, for as long as six months to a year.

Eighteen of the Association's thirty-four members are merchandisers of household ironers. The Decatur campaign was designed as a mass test of their various sales promotion methods and was built around a letter-writing contest in which witnessing an iron-

ing demonstration in a store or in the home was an eligibility requirement. Canvassing was brisk through-

Ferro Enamel appointments

Ferro Enamel Corporation has announced the appointment of Dr. Frank J. Zvanut to head their newly-formed Clay Division which will handle the distribution of porcelain



Dr. Frank Zvanut

enamel and other special-purpose clays being produced in Ferro's new plant in Nashville, Tenn. Prior to his new appointment, Dr. Zvanut was

out. One dealer made a sale in a home at 10:30 p.m. on the final day. Local newspaper and radio advertising was used by the campaign participants and the Decatur dealers tied in with a heavy schedule of their own.

"I've heard more about ironers in the past four days than I did in ten years before then," one housewife said soon after the test program began.

Industry representatives said that the test campaign was one which could be conducted with equal success by any cooperative group of retailers in a community or on a smaller scale by even one enterprising dealer.

Hotpoint produces 2,000,000th range

With the production of its 2,000,000th range, Hotpoint, Inc. is launching a nationwide electric range promotion by means of large cooking schools conducted by dealers in 100 key city markets, according to Leonard C. Truesdell, vice president of marketing.



Earl Skillicorn

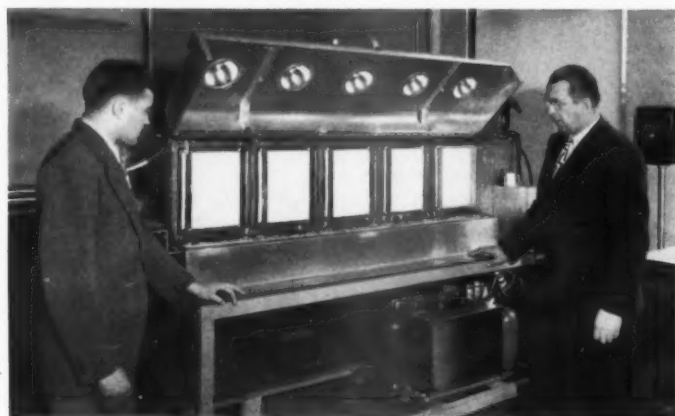
manager of process and quality control for the company's Frit Division. He has authored several technical papers on clay and was instructor of Ferro's 1949 training course for porcelain enamellers.

Earl Skillicorn, recently with Ferro's Customer Service Laboratory, was named manager of process and quality control, succeeding Dr. Zva-

nut. Prior to joining Ferro in 1942, Skillicorn was with Seeger Refrigerator Co. where he held positions as

manager of control and porcelain enameling superintendent.

Begin study of porcelain enamel spalling at U. of I.



R. J. McEvoy, left, assistant in the Department of Ceramic Engineering, and L. H. Davidson, product development engineer of American Central Corp., inspect the new machine installed in the Department for accelerated service testing of porcelain enameled steel panels. With the cover containing the five infra-red bulbs open, the condition of the panels is easily checked. Also, visible is the water trough, just below the panel, for providing moisture to the cover coat side. The controls for the refrigerator unit, the recorder, counter, and gauge are on the right end of the machine.

An investigation of porcelain enamels under alternate freezing and thawing conditions in the presence of moisture has been started in the Department of Ceramic Engineering at the University of Illinois.

The nature of this research program is fundamentally a study of various enamel compositions. Practical applications of the findings can be foreseen in cold wall type refrigerators. The investigation will center around the test machine shown which provides automatically controlled, accelerated service conditions to two rows of 5 one-foot square test panels, simultaneously.

This test machine has a 1 hp. refrigerating unit using Freon-12 piped through "W" shaped coils attached with non-hardening thermoplastic gum to each enameled panel. A constant level of water is maintained in the troughs running parallel and just below the panels from a five gallon bottle. Constant temperature of this water is maintained by strip heaters having three-position controls.

Thawing conditions are provided by ten 250 watt infra-red lamps, one

for each panel. The test cycles, consisting of one period of freezing and one of thawing, take a total time of two minutes. With the machine on full time, it is estimated that one week of operation will duplicate the

service conditions in a domestic refrigerator for one year.

Controls and instruments on the unit include: a magnetic counter to indicate the number of cycles, a strip recorder to show the frequency of cycles, temperature and pressure gauges to indicate those conditions in the refrigerant, and the automatic cycling switch which controls the refrigeration unit and heat lights. A manual by-pass switch is also provided for the lights.

Porcelain enamels to be studied include the three major types of cover coats, zirconium, antimony, and titanium in one and two coat applications over various ground coats. Several factors will be studied and correlated with test conditions. These include thermal expansion, bubble structure, and firing conditions of the enamels.

The study is being made under the supervision of Dr. A. I. Andrews, head of the Department of Ceramic Engineering, by R. J. McEvoy, assistant in Ceramic Engineering. The test machine was built to specifications of the Department at the American Central Corp. plant, at Connersville, Ind., under the supervision of L. H. Davidson, product development engineer.

All-porcelain washer undamaged by tornado



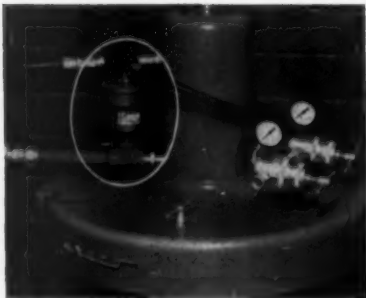
A Frigidaire all-porcelain automatic washer was blown 50 feet when a tornado cut a three-mile swath of devastation through the town of War-

ren, Arkansas. Whit S. Brooks, Frigidaire dealer in Warren, reported that the washer was not damaged in any

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New Supplies and Equipment

E-21. Surge eliminator valve for use with spray guns



A new surge eliminator valve for use with any spray gun which cuts the pump in or out as the gun is used has been announced by A. Shelburne Company, designers of spray gun equipment. The new valve, known as "Steadyflow," is a small compact unit weighing less than 10 pounds, and is easily attached to any type of air dis-

More Information

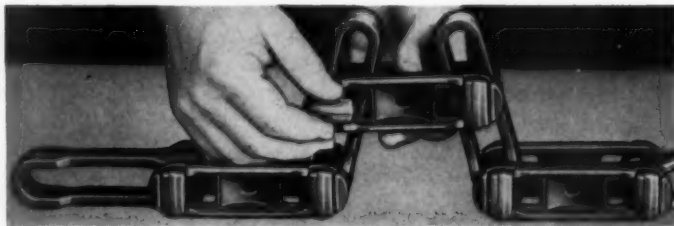
For more information on new industrial literature reviewed here, fill out the order form on this page.

placement pump. No extra hoses to the gun are necessary.

E-22. Non-foaming water wash spray booth compound

A non-foaming water wash spray booth compound, known as "Differentiated Klarifiant," has been developed by The DuBois Company. Because of its non-foaming characteristics, it is claimed that higher concentrations can be used which in turn keeps the hydraulic system of the spray booth clean. This material is recommended for use in down-draft booths.

E-23. New type rivetless conveyor chain



An improved type of Keystone Rivetless Chain is a standard chain used on overhead conveyors and floor and drag chain conveyors. Keystone Chain is assembled or disassembled

without use of tools. It has no rivets, welds or bolts, requires no special or joining links and may be disconnected at any point. There are only three components of this product of Jervis

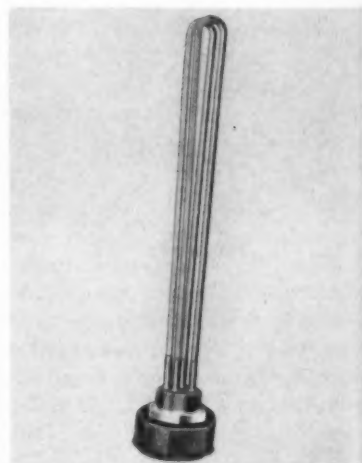
B. Webb Company — the center or Keystone link, the side links and the connecting pin.

E-24. Multilift rotary tank tool



An improved model of the Multilift Rotary Tank "Magnetool," with 50 per cent more magnetic power, to pick up steel parts in tanks is announced by Multifinish Mfg. Co. It is claimed that design features make it impossible for the tool to attach to the tank, and no contact with parts is necessary, as they jump from one to two inches to the magnetic tube. The new tanks units are built to resist ordinary acid and alkali solutions such as those used in cleaning, plating, etc.

E-25. New all-steel, all-Inconel electric immersion heaters



A new series of all-stainless or all-Inconel electric immersion heaters has

to Page 72 →

FINISH
360 N. Michigan Ave.
Chicago 1, Illinois

Please forward to me at once information on the new supplies and equipment and new industrial literature as enumerated below:

No. _____ No. _____ No. _____ No. _____

No. _____ No. _____ No. _____ No. _____

Name _____ Title _____

Company _____

Company Address _____

City _____ Zone _____ State _____

PORCELAIN ENAMEL INSTITUTE, INC.

1010 VERMONT AVE. N. W., WASHINGTON 5, D. C.

These companies in other countries are members of the P. E. I.

AB Gustavsbergs Fabriker
Gustavsberg, Sweden

Leopold et Cie
Pfaffenhoffen, France

Charles Hope, Limited
Brisbane, Australia

Scott Brothers Limited
Christchurch, New Zealand

Jury Holloware
Brierley Hill, England

Wallis & Co., Limited
Long Eaton, Nottingham, England

Productos Metalicos Esmaltados, S.A.
Mexico, D.F.

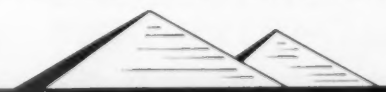
If you operate a porcelain enameling plant in any country you should belong to the P. E. I.

Operators of porcelain enameling plants in any country can benefit from membership to an extent far beyond the modest membership fee.

Plant operators in the U.S.A. who have enameling facilities should consider P.E.I. membership a must—for the benefits it offers to management, sales and advertising departments, and plant operating men. Facts on enamel processing, market information and selling methods are yours, as a member.

It will pay you to "join up." Apply now for membership.

Genuine
PORCELAIN ENAMEL



"THE LIFETIME FINISH"

New industrial literature

501. Stamping dies and tools

An eight-page bulletin, "Simplify your Production with Advance Tooling," has been published by Advance Die & Tool Company, manufacturers of complicated dies and tools for difficult sheet metal drawing and forming operations.

The bulletin illustrates a variety of large and complex stampings produced from Advance dies and tools.

More Information

For more information on new supplies and equipment reviewed here, fill out the order form on page 54.

Also described and shown are the complete facilities and equipment of the company, including its engineering department, machine tool room, assembly room, stock room, heat

treating and "try-out" press departments.

502. Flexible metal hose

A new colorfully illustrated 68-page book contains full description and complete specifications for standard types of flexible metal hose manufactured by Chicago Metal Hose Corporation. In addition, the book contains complete sections on expansion joints for piping systems; stainless steel and brass bellows, and various conduits and special assemblies of these components.

503. Proportioning oil burners

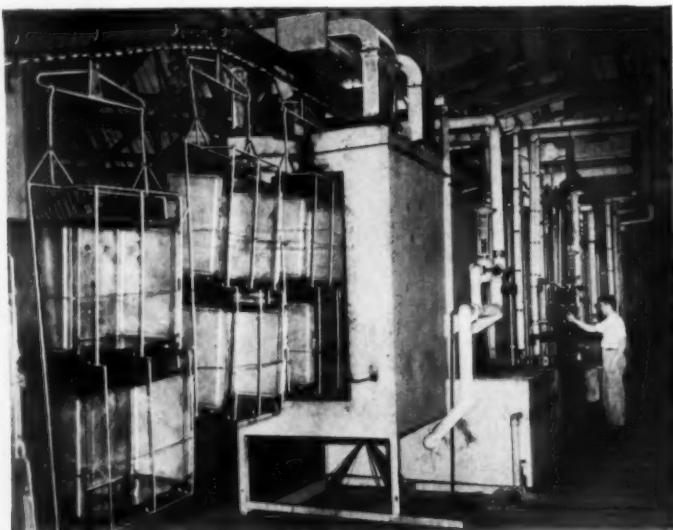
Information of proportioning oil burners for precision control of temperature and atmosphere in all heating applications is contained in Catalog 407 published by Hauck Manufacturing Co. The manufacturer states that "because of the accurate control and proportioning of oil and air and uniform atomization over the entire range of capacity, our burners have been applied to semi-muffle type furnaces which method of firing has saved considerable fuel over the full muffle type furnaces." With the burners, manufacturers "can arrange for modulating type of firing control which gives more accurate temperature and better enameling results."

504. "Basic Facts"

A new informative booklet, "Basic Facts," has been published by United States Steel. Among the chapter headings are "Better Steel through Research and Technology," and "Opportunities in U. S. Steel."

505. New air compressors

Data on three new, larger capacity DeVilbiss compressors for stationary type installations is contained in Form CK-101. Such features as 4 cylinder balanced "V" pumps, enlarged and highly refined cooling system, floating type tank mount, among others, are said to account for the remarkable operation claimed for these all-new compressors.



METALWASH CONTINUOUS SPRAY PICKLING EQUIPMENT for Preparing Steel Parts for Porcelain Enameling

The METALWASH Automatic Spray Pickling Machine pictured above is installed in a plant of a leading refrigerator manufacturer. The operation is continuous through washing, rinsing, pickling, nickel depositing, neutralizing and drying — all in one unit, compact and complete.

This process produces a cleanly pickled surface with great adherence qualities and ideal working conditions. Manufacturers, using these machines, report a greatly increased production and a finer enamel finish.

Inquiries on spray pickling and related processes are cordially invited.

METALWASH MACHINERY CORP.
 149-155 Shaw Ave. Irvington 11, N. J.

From Editor's mail

word from an overseas reader

Dear Sirs:

For several years I have been an admirer of your magazine "Finish", and from time to time have been able to see copies, but this is becoming increasingly difficult and I would be glad to become a subscriber for regular copies.

As the arrangement for the remittance of Sterling funds to America can only be made on direct demand for payment, I would be glad to receive from you your invoice to cover one year's subscription.

A. Biddulph
Penn, Wolverhampton
Staffs., England

"very interesting reading"

Gentlemen:

I am sorry that we neglected enclosing our employees' bulletin and are sending you a copy (Issue I) with this letter.

The writer also wishes to extend our invitation to visit our plant at any time convenient to you.

We have been getting your publications "Finish" for quite a few years and find it very interesting reading.

W. G. Sachs
Vice-President
The Petersen Oven Co.
Franklin Park, Ill.

note from a vault company

Dear Sir:

Kindly effect correction on your mailing list and have the Finish magazine sent to The Sozonian Vault Company, Bucyrus, Ohio, eliminating the name of Ed Warner for the reason that he is no longer connected with the company.

L. C. Haaser
Secretary-Treasurer
The Sozonian Vault Co.
Bucyrus, Ohio



- PRODUCE MORE
- LOWER COST
- PROVIDE "LIVE STORAGE"

WEBB OVERHEAD CONVEYORS

The "unused half of your factory" . . . space above machine and work level . . . is seldom used. You pay for it when you erect the building . . . why not use it?

Webb Overhead Conveyors . . . Continuous or Power and Free . . . put the unused half to work. Production is increased, smoothed and automatically programmed. Productivity is improved. Valuable floor space is released for manufacturing. Live storage banks are provided off the floor, out of the way. Frequently, parts produced on two or three shifts are banked for assembly consumption on one shift. The right parts are fed to the right place at the right time.

Jervis B. Webb Company builds every type of conveyor as well as Overhead. There is a combination that will save you more. Let us plan with you. Our 30 years' experience qualifies us to handle any job.

5176

jervis b. webb co.

CONVEYOR ENGINEERS and MANUFACTURERS

8951 Alpine Ave. • Detroit 4, Mich.

Offices in Principal Cities



Around the WORLD with finish

Finish is written by and for top management and key plant men in the plants of major appliance and allied metal products manufacturers of the United States. Circulation completely blankets the key men in these important producing fields throughout the country.

Manufacturers in other countries pay five dollars a year, *in U. S. funds*, to get a monthly copy of *finish*. The fact that our foreign subscription list is growing steadily, without solicitation, is strong evidence that *finish* does reach "round the world" in its interest to plant men. Subscriptions are now listed for important producing companies in every country where metal products manufacturing is important.

We asked our circulation department to make a list of the new foreign subscriptions for the current month. Included were the following:

Wetzlar, U.S. Zone, Germany	Paris, France	Hannover, Germany	Montevideo, Uruguay
Birmingham, England	Hong Kong, China	Terborg, Holland	Staffordshire, England
Basel, Switzerland	Typical additions to a growing list of foreign subscribers to <i>finish</i> .		Monterrey, Mexico

The foreign subscription list is small numerically, representing less than 3% of the total *finish* circulation. It does include many of the outstanding manufacturing organizations, in size and purchasing power, throughout the world.

This represents a *plus* value to the companies who present their advertising story regularly in *finish*. These subscribers in other countries are most anxious to procure U. S. materials and equipment as "dollars" are made available.

Tell your story in *finish* and you tell it
"round the world"

Dana Chase PUBLICATIONS

360 NORTH MICHIGAN AVENUE • CHICAGO 1 • ILLINOIS
TELEPHONE Central 6-1229

finish

Central district enamellers visit Erie plant

ONE hundred and thirty-six members of the Central District Enamellers Club attended a dinner-meeting April 1, at the Erie (Pa.) Works of General Electric Company.

Following the dinner, the business meeting was called to order by John Lannon, Club president. Then Dr. Marbaker, H. Smith and W. Donaldson were appointed to the committee for nominating officers for the coming year. Election will be held at the Club's next meeting in Cleveland,

Ohio, late in May.

W. B. Hill, manager of manufacturing for General Electric's Household Refrigerator Division, gave an interesting talk on operations at General Electric's Erie plant, stressing the trends of improvement in household refrigeration.

Then A. J. Redpath, engineer of G. E. refrigerator cabinets, discussed "Statistical Methods of Quality Control." He gave actual demonstrations on how statistical methods were

worked out in the Erie plant, pointing out how quality could be improved by the proper type of inspection using the standard methods shown in the demonstration.

Following Redpath's talk, the enamellers were divided into groups of four or five, and were conducted on a tour of the plant's entire refrigerator cabinet division starting with the assembly department. The various machine operations of stamping, welding, etc. were well covered and finally the groups met in the enamel division proper. The four-hour dinner meeting and plant tour was concluded about 10 p.m.

Top row, left to right: Eckels and Hume; A. J. Redpath. Second row, Harris, Cherry and Wehrley; Long, Duvall and McCoy. Bottom row: Thompson and Wilson; Schefferle and Spencer-Strong.



→ from Page 53

way, though the tornado killed 51 people and injured 300.

First new quarterly "Enamelist" published

The *Enamelist*, trade magazine serving the porcelain enameling industry for more than a quarter of a century, has published its first quarterly issue, according to C. D. Clawson, editor. Up to the present time the magazine,

published by The Enamelist Publishing Company, Cleveland, Ohio, has appeared as a monthly magazine.

The new quarterly is devoted "al-

most entirely to technical papers and articles treating of problems and practices in the Porcelain enamel and allied industries."

PEI names sales management conference speakers

Featured speakers for the 3rd annual Sales Management Conference of the Porcelain Enamel Institute, June 24, at Hotel Carter, Cleveland, Ohio, will include James J. Nance, president of Hotpoint; Lawrence F.

Greenberger, director of personnel training for Kaufmann Department Stores; and W. J. Russell, vice president in charge of engineering and development, Landers, Frary & Clark, according to an announcement.

The subject of Nance's talk is as yet unannounced, but it will tie in with the general theme of the morning session of the one-day Conference, which is "How to Sell." Greenberger will discuss "Selling your Products at the Retail Level." Russell's subject has not yet been announced.

The afternoon program will be on the theme, "How to Use Porcelain Enamel as a Selling Tool," and will point out how manufacturers of porcelain enameled products can use porcelain enamel as a sales feature of their wares.



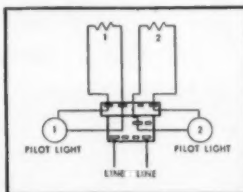
Robertshaw ONE DIAL AUTOMATIC OVEN TEMPERATURE REGULATION

The Robertshaw Model C-1 shown here is a combination thermostat and selector switch. It automatically switches from "Preheat" to "Bake".

For fast preheating of oven, dial is turned to "Broil" position first, then to the temperature setting desired. This turns ON both the lower baking and upper broiling elements. Both the "Bake" and "Broil" pilots turn ON. When oven reaches set temperature both pilots turn OFF, signalling that oven is at pre-heat temperature and ready for food to be baked or roasted. The broiling element will automatically remain out of the circuit and the set oven temperature will be maintained by cycling of lower element only. For low temperature and slow pre-heat, dial is turned from OFF to desired temperature, thus throwing on the lower element only.

Write for full information about this and other Robertshaw Thermostats for home appliances.

Wiring Diagram No. R-2385-C—SLOW HEAT. A Element #1—Turn dial to any temperature. Element #1 cycles at set temperature. B Element #2—Turn dial to maximum temperature. Element #2 cycles at maximum temperature. FAST HEAT. Turn dial to maximum temperature then back to desired temperature. When set temperature is reached, elements #1 and #2 are automatically disconnected and after that only element #1 is cycling at set temperature.



In home and industry **EVERYTHING'S UNDER CONTROL**



Robertshaw-Fulton
CONTROLS COMPANY
ROBERTSHAW THERMOSTAT DIVISION
YOUNGWOOD, PENNSYLVANIA

Canadian Ceramic Society 1950 convention dates

The Canadian Ceramic Society has announced that its 48th annual convention will be held February 6-8, 1950, at Hotel General Brock, Niagara Falls, Ontario.

New firm to design and build rolling mill equipment

Formation of a new engineering firm, Christopher Williams & Co., Inc., with offices at 923 Penn Avenue, Pittsburgh, has been announced.

The new company will act as engineers designing and building rolling mill equipment. Special emphasis will be placed on engineering problems not ordinarily included in the range of activities of larger engineering firms. The company will handle special conveyor and materials handling equipment and also act as manufacturers representatives.

Christopher Williams, president of the new firm, was formerly associ-

ated with the Mesta Machine Company and Mechanical Handling Systems.

Caloric introduces new gas range pilot

A new constant pilot which saves gas and virtually eliminates pilot heat is one of the advanced features built into Ultramatic Caloric "CP" gas ranges now in production.

The heat generated by a constant pilot, low as it has been, is now reduced so sharply that the new pilot for oven and broiler has only 40% of the Btu input of the usual pilots on "CP" ranges, a report states. The new pilots are included on all Caloric "CP" models. The new features can be used with all types of gas.

Skarin joins Ohio Ferro

The Ohio Ferro-Alloys Corporation, Canton, Ohio, has announced the appointment of Eric G. Skarin as service metallurgist for the company.

Pittsburgh ACS section holds symposium on physics and ceramics

A combined meeting of the Physical Society of Pittsburgh and the Pittsburgh Section of the American Ceramic Society, held at the Mellon Institute, April 12, featured a symposium on physics and ceramics.

The first speaker, Prof. Mary E. Wurga, of the University of Pittsburgh, described some new uses of the spectrograph in various ceramic fields. This new tool has decreased the time required for analyses from a period of days to one of hours in some cases. Dr. Wurga showed slides of the equipment and the methods used in emission and transmission spectroscopy.

James R. Johnston, of the Department of Ceramics at Ohio State University, discussed his work with radioactive tracers applied to ceramic research.

Following the symposium, the following new officers were elected: James R. Beam, councillor; D. O. Evans, chairman; F. P. Shonkwiler, vice chairman; Donald Walsh, secretary; and W. C. Mohr, treasurer.

finish MAY • 1949

Maypole Party

The Chicago District Enamellers Club Maypole Party will be held Friday, June 3, at Gary Country Club, Gary, Indiana.

Dupont reduces prices on lead-containing inorganic pigment colors

Another price reduction on all lead-containing inorganic pigment colors was announced by the Du Pont Com-

pany. The cut has been applied to all shipments made on and after April 8.

The price of chrome yellows and chrome oranges was lowered one cent a pound. Molybdate oranges and chrome greens were reduced one-half cent a pound.

A previous reduction was made on March 17 when the same pigments were lowered by similar amounts. Both reductions were said to have been made possible by the recent cuts in the price of lead.

GOOD HINGED CRATES SAVE TIME AND MONEY



Tight Corner Hinged Crate



Kraft Crate

Yes—good hinged crates do save time and money. They save time in product packaging through rapid assembly. They save money too in storage space, but most important of all they save money by getting the product to its final destination free of damage.

Bigelow-Garvey crates are good crates, for they are properly designed for your particular product, and (built of the finest packaging materials) accurately manufactured in all details.

Our Tight Corner Hinged Crate offers rigidity, strength, lightness

and ease of assembly not found in ordinary crates. Even the nail holes are pre-drilled for speedy assembly.

Our Kraft Hinged Crate for completely closed packaging has only three sections—top, bottom and collapsible mat. And it is reinforced with both horizontal and vertical wood cleats.

For stoves, ranges, heaters, refrigerators, washers, ironers—for appliances and household products—use Bigelow-Garvey crates for speed, economy and safe shipment.

Your shipping problems are our problem. Write us fully.

BIGELOW-GARVEY LUMBER CO.

General Office and Laboratory

320 West Huron Street • Chicago 10, Ill.

Mills • Arkansas • Georgia • Wisconsin • Minnesota • Washington

Gas appliance manufacturers

meet at Colorado Springs

(Continued from Page 33)

meet an era of "hard selling" ahead were presented and urged by President Nugent.

Stressing the need for a unified and consolidated sales front to stimulate consumer education and increase the use and sale of gas appliances and equipment, Nugent pointed out that the most important sessions of the Colorado Springs meeting were those devoted to the presentation of the various sales, promotion and advertising plans being conducted and formulated jointly by the American Gas Association, GAMA, the gas utilities, the manufacturers and the distributors, dealers and other outlets throughout the country. These organizations serve 27,000,000 gas users and now are engaged in unifying sales and promotion efforts.

Among the major advertising and promotional campaigns listed by Nugent were: the "CP" gas range campaign; the AGA-GAMA domestic gas

range campaign; the AGA-GAMA "Flame of Freedom" program for gas refrigerators; the "Court of Flame" national water heater campaign, and the New Freedom gas kitchen program.

Rough and tumble competition

"The long expected buyers' market has arrived with a bang, and success or failure in business will depend on salesmanship," Hugh H. Cuthrell stated in his address in which he referred to the battle for the dollars as one of "rough and tumble" competition. He suggested the following 8-point program for appliance manufacturers:

1. Constant improvement of equipment, both mechanical and in design.
2. More effective use of American Gas Association research.
3. Greater capitalization on public acceptance of the American Gas Association's Seal of Approval.

4. More effective dealer programs.
5. Better trained dealers.
6. More effective ways of reaching the mass building market.
7. Replacing equipment in strategic show places.
8. More effective advertising in greater volume.

The grass is greener — ?

Speaking frankly to the manufacturers, Cuthrell said, "Some of our manufacturers of gas equipment are looking with longing eyes at the market they think exists for their product if it were electrically operated. I am here to tell you I think such flirtations may be disastrous, and here is why.

"The gas industry is a growing, living industry. We are now serving more customers than at any time in our history — over 22 and a half million households — a gain of 32 per cent in the last ten years, and in addition, there are at least four and a half million 'LP' gas customers beyond our gas mains. Gas sales have increased 11.7 per cent in the space of one year and let no one think that we acquired this increased load by default. We achieved this increase because we earned it, at least in some measure, through research, advertising and promotion. With a total of 27,000,000 customers cooking with gas, there is an annual replacement market alone for 3,000,000 ranges if we figure on a length of life of 9 years per range. We know there is a saturation of 68.5 per cent of automatic water heaters on gas lines and if water heaters last an average of

to Page 65 →



Above: GAMA Marketing Committee has an important job in helping guide the sales and marketing plans of the gas appliance manufacturing industry.

Right: Harold Massey, on left, ass't managing director of GAMA, and T. T. Killian, chairman, Marketing Committee, with Mrs. Killian, during a moment of relaxation.





All aboard the Quality Train! Climb on with *Hommel's* materials and you're guaranteed a pleasant and profitable journey . . . because Hommel Frits, Clays, and Oxides are *scientifically controlled* in our laboratories to satisfy your most rigid requirements . . . because OHCO products have successfully been used and re-used by 5000 consistent customers . . . we feel con-

fident in making the claim, backed up by 57 years of quality-production, that Hommel's Frits, Clays, and Oxides will cut your costs and give unmatched quality in your finished products. Not a boast . . . but a proved fact!

So when our representative calls on you, bear in mind that he wants to show you how costs can be cut and finished quality improved.

Laboratory Controlled Production of Ceramic Supplies

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|--|------------------|
| • FRIT for Steel, Cast Iron or Pottery | • BRONZE POWDERS |
| • CERAMIC COLORS | • METAL POWDERS |
| • CHEMICALS | • SUPPLIES |
| | • EQUIPMENT |

Our Technical Staff and Samples are available to you without obligation. Let us help you with your problems.



World's Most Complete Ceramic Supplier

★

★

"Buy U. S. Savings Bonds during the Opportunity Drive,"

SAY THESE LEADING AMERICANS

WILLIAM GREEN, President,
American Federation of Labor



"For the working man, an increased investment in U. S. Savings Bonds can mean not only increased security but increased ability to take advantage of the opportunities that are part of the American way of life."

WINTHROP W. ALDRICH, Chairman,
Chase National Bank



"I believe that every individual who can possibly do so should buy more U. S. Savings Bonds. These bonds represent one of the best investments of our time."

PHILIP MURRAY, President,
Congress of Industrial Organizations



"The C.I.O. has endorsed every effort to encourage the worker to put more of his earnings into U. S. Savings Bonds. They represent both security and independence."

CHARLES F. BRANNAN
Secretary of Agriculture



"I am heartily in favor of the Opportunity Drive to buy more U. S. Savings Bonds. Everyone engaged in farming should recognize the importance of a backlog of invested savings as a means of realizing the agricultural opportunities of the future."

DURING MAY AND JUNE, the U. S. Savings Bond Opportunity Drive is on!

It is called the Opportunity Drive—because it is truly an opportunity for *you* to get ahead by increasing your own personal measure of financial security and independence.

If you haven't been buying Savings Bonds regularly, start *now*.

If you have been buying them, add an *extra* Bond or two to your purchases this month and next. Remember—you'll get back \$4 for every \$3 in a short ten years' time!

**Put More Opportunity
in Your Future...**

INVEST IN U. S. SAVINGS BONDS



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Magazine Publishers of America as a public service.

→ from Page 62

ten years, which is certainly stretching a point in some communities, there is an annual replacement market here for 1,540,000 units . . .

"Our network of pipelines, both manufacturing and natural, now stretches 333,400 miles — the equivalent of 13½ times around the earth's equator—exceeding by 106,000 miles all the railroads in the nation — and 14,600 more miles of natural gas pipe will be added as soon as government approval is given.

"I have talked only about replacements and I will leave it to you to conjure up the rosy picture of what can be done if you will only set yourselves to winning new friends and influencing new people for gas equipment."

No depression

Managing Director Whitelaw, in his report submitted to the Board of Directors, said that he was optimistic about the business future, and that indications seemed to point toward good business in the industry this year, although probably not up to 1948 levels. He said he expected no depression, and that factors usually present in every other business depression did not seem to be present today. He pointed out that as consumer demand has declined, consumer savings have increased and that the country is in sound condition.

Stanley Hobson heads new slate

The names of new officers, members of the board of directors, and chairmen and vice-chairmen for the various manufacturing groups were announced following election. These newly elected officers assume their responsibilities in October, 1949, at the end of the current terms of the officers now seated.

Heading the new slate of officers is Stanley H. Hobson, Geo. D. Roper Corporation, as president. First vice president is Frederic O. Hess, Selas Corporation of America; second vice president, Louis Ruthenberg, Servel, Inc.; treasurer, John Van Norden, American Meter Company; and secretary, H. Leigh Whitelaw.

To Direct GAMA Effective October 1949

GAMA Officers — General Session

Stanley H. Hobson, President
Frederic O. Hess, 1st Vice President
Louis Ruthenberg, 2nd Vice President
John Van Norden, Treasurer

Geo. D. Roper Corporation
Selas Corporation of America
Servel, Inc.
American Meter Company

GAMA Board of Directors

H. Leigh Whitelaw, Secretary

Gas Appliance Mfrs. Assn.

Gas Floor Furnace Group

Lee Brand, Chairman
R. O. Montrief, Vice Chairman
Bradford Corbin, Executive Committee

Empire Stove Company
Ward Heater Company
The Coleman Company, Inc.

Gas Furnace Group

Roger Booth, Chairman
Russell E. Cook, Vice Chairman
Keith Davis, Executive Committee

Lennox Furnace Company
Thatcher Furnace Company
Bryant Heater Division, Affiliated Gas Equipment, Inc.

Industrial Division

Alvin Stock, Chairman
D. A. Campbell, Vice Chairman
Herman Gehrich, Executive Committee

The Partlow Corporation
Bryant Heater Division
Gehrich and Gehrich, Inc.

Gas Conversion Burner Group

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F. A. Furlong, Vice Chairman
E. A. Norman, Jr., Executive Committee

Columbia Burner Company
Autogas Corporation
Norman Products Company

Gas Valve Division

Philip S. Harper, Chairman
E. S. Stuckenholt, Vice Chairman
Herbert A. Watson, Executive Committee

Harper-Wyman Company
W. S. Schoenberger Company
Lincoln Brass Works, Inc.

Controls and Related Accessories Division

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R. S. Penn, Vice Chairman
Howard Dyer, Executive Committee

General Controls Company
Penn Electric Switch Company
Domestic Thermostat Company

Gas House Heating and Air Conditioning Equipment Division

Irving E. Seith, Chairman
Harry Gurney, Vice Chairman
Frank L. Meyer, Executive Committee

Forest City Foundries Company
Surface Combustion Corporation
The Meyer Furnace Company

Gas Boiler Group

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J. Crawford, Vice Chairman
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American Radiator & Stand. Sanitary Corp.
Bryant Heater Division
L. J. Mueller Furnace Company

"CP" Manufacturers Group

Harold Jalass, Chairman
Henry Honer, Vice Chairman

Cribben and Sexton Company
Western Stove Company, Inc.

Direct Heating Equipment Division

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F. Donald Hart, Vice Chairman
R. F. Cleary, Executive Committee
A. S. Martinson, Executive Committee
G. H. McFadden, Executive Committee

Armstrong Products Company
Tennessee Enamel Manufacturing Co.
Strait & Richards, Inc.
Hammell Radiator Engineering Company
The Ohio Foundry & Mfg. Co.

Gas Water Heater Division

Leland M. Feigel
Albert H. Sutton
Frank J. Nugent

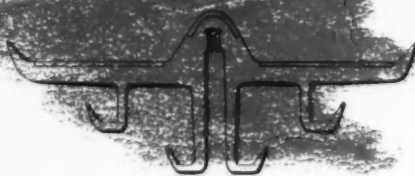
Servel, Inc.
Mission Appliance Corporation
Bryant Heater Division, Affiliated Gas Equipment, Inc.



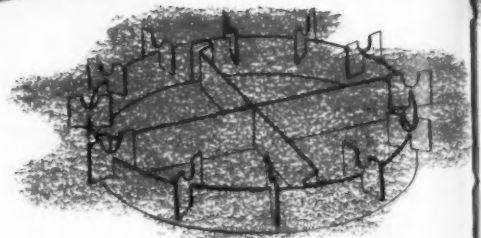
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Six-Point Coat Hanger



Rolled Alloy Tub-Burning Ring

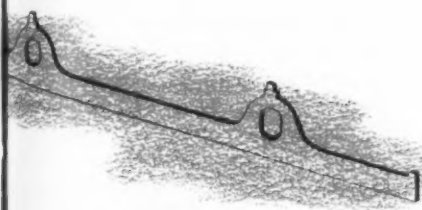


A Dependable Guide to Better Porcelain Enameling

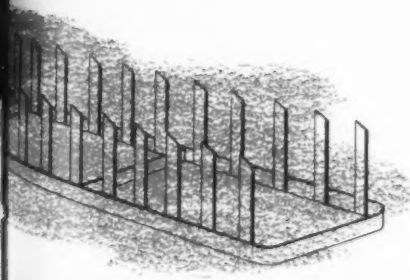
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with MODERN BURNING TOOLS



Suspension Bar



Rolled Alloy Point Loop Rack

Standardize on firing *with tools designed for your specific burning application—with the correct weight ratio—with the proper analysis*, and you will immediately increase your production of higher quality ware. At the same time, cost of finishing will be reduced because failures due to spalling are held to an absolute minimum when burning tools are designed with an analysis that resists oxidation at *peak* operating temperatures.

Ferro, with 25 years' experience in designing long-lasting tools for high-temperature finishing operations, will be glad to survey your burning tool setup and make recommendations of a practical nature, that will increase your production of better finished ware. Savings in loading and unloading your line—in labor costs—increased life of alloy and reduced fuel consumption are a few of the other dividends a burning tool checkup can provide. Write us for further information about this Ferro service or request a Ferro representative to call the next time he is in your territory.

Remember! Modern FERRO Burning Tools Will Provide These Advantages:

1. Increase Life of Alloy
2. Reduce Labor Costs
3. Reduce Ware Damage
4. Reduce Fuel Consumption
5. Speed-up Loading and Unloading Your Line
6. Result in Better Finished Ware at the Lowest Possible Firing Cost

FERRO ENAMEL CORPORATION

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FERRO

A method of centrifuging alkali cleaners in finishing plants

(Continued from Page 24)

Now we will make a direct comparison of the second, third and fourth months of operation with the centrifuge in 1948 with the second, third and fourth months of operation in 1947, which was referred to in the previous example.

In the period after the centrifuge was put in operation, 1,000 pounds less cleaner was used in the second month, 3,500 pounds less in the third month, and 4,500 pounds less in the fourth month. Active alkali dropped to 68% in the first period, and only to 75% in the second. This means that during the three-months period a total of 9,000 pounds less cleaner was used than for the comparative period.

Another point for consideration is that during the 1947 comparative period, the tanks were handling about 330,000 sq. ft. of enamelware per month. This test period during 1948 showed a recorded handling of 1,000,000 sq. ft. per month—or a load increase of 20%.

The next fact of interest is that although in 1947 tanks were dumped

at the end of the fourth month, in 1948 the tanks were continued in use with additions of 4500 lbs. in the fifth month and 6,000 pounds in the sixth. As this report is written, the tanks are well into their seventh month of operation. (Still in operation at the time this report was prepared.)

Practice has been to clean the centrifuge once a day during this period of test, and aside from yielding a pound of dirt per day, it has also produced very small quantities of oil, 6 ounces being the most recovered in any one day. (As explained, this low oil recovery may be partially accounted for by the pre-cleaning process employed). In any plants where more oil is encountered than in the plant covered by this test, it is expected that the centrifuge method will be of additional help in preventing the drawing oils from contaminating the cleaning solution. It will be noted that this method is suggested for alkali cleaners only at the present time, although tests are being conducted in connection with cleaners of other types.

Editorial credit to the late L. E. Punderson

In connection with the publication of the accompanying article, *finish* feels that the late Gene Punderson, of the V. B. Punderson Company (formerly known as the L. E. Punderson Company), should be given credit for his interest and initiative in this development in which he was quite active immediately prior to his passing. As a matter of fact, the few notes which will follow this comment are taken from information dictated by Mr. Punderson in the *finish* offices on the day immediately preceding his death, which occurred enroute from Chicago to his home in Cleveland, Ohio. We, therefore, feel we would be remiss if we did not include a few of his comments and give credit to him for his work on this project which was designed to improve processing in the industry which he was serving. The following are a few selected and edited excerpts

from the dictation referred to:

"The pickle room has been avoided to too great an extent in the past. If you were washing dishes in a pan and used the same dishwater for a couple of weeks for this purpose, merely adding a little more water to keep the level up to the proper point, and also adding soap, at the end of a week those using the dishes would most certainly have ptomaine poisoning. Why can't we have ptomaine poisoning as far as porcelain enamel finishing is concerned?

"If you were going out and start from scratch to hire someone to operate a pickling room, it would seem entirely logical to hire a woman who has a thorough knowledge of how to properly wash clothes. There is no vast difference between washing clothes and washing steel. To properly wash the clothes, the woman would use plenty of agitation, plenty

of hot water and plenty of soap, and then she would most certainly pay definite attention to rinsing. In many pickle rooms, about all that can be said is that the metal receives a 'dunking.'

"If a service man comes into a plant and runs into difficulty, one of the first places he will check will be the pickle room and the cleaner tanks. If the tanks have been in use for any length of time, dumping is usually recommended, for the service man knows that the first few days of operation of the tanks should give clean work with any type of reliable cleaner. Naturally, if the cleaner tanks could be maintained with 'clean' cleaner all of the time, there would be no necessity for dumping them. Unfortunately, we have had no reliable tests to find out how much foreign material has accumulated in the tanks.

"Experiments are being conducted with the centrifuge, or a centrifugal separator, in an effort to determine the practicability of removing contaminants from cleaner tanks—those using the alkali type of cleaner. The separator under test takes up only about 2½ square feet of floor space. It is an adaptation of a separator commonly used for separating marine engine oil. It operates at a very high rotational velocity — approximately 15,000 r.p.m. The machine operates on a very simple centrifugal principle, with the liquid entering at the bottom and discharging from the top. As the centrifuge spins, the heavy materials are thrown to the side and stick to the sides in a layer that is squeezed dry by terrific centrifugal force. Tests show that only contaminants are removed from the cleaner, and no cleaner components are lost. This is true for alkali cleaners, but at present it is anticipated that there would be separation in emulsion type cleaners. There is no indication of separation of any soap from the alkali cleaner, except when separating at temperatures below those recommended.

"Tests over a period of months would indicate that this method of cleaning alkali cleaner solutions in

to Page 70 →

Success story:

"Cleaned 30 tons of parts without a single failure"

A superintendent of vitreous enameling recently faced one of the toughest cleaning jobs in his experience. Oil, grease, tar, drawing compound, smut, rust and heavy shop dirt had to be removed from large quantities of mixed grades of steel.

With the help of his Oakite Technical Service Representative he developed a solvent and alkaline cleaning cycle that did the job swiftly and economically. Rejects were soon reduced to less than the rate for the best grades of steel parts.

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Apex announces new "glass" product



Perfection of a method for production-molding fibre glass reinforced laminate for a wide range of new uses was announced by C. G. Frantz, president of Apex Electrical Mfg. Co., who disclosed that Apex has started pilot production of molded glass parts for automatic washers.

finish MAY • 1949

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THE long-time porcelain enameling experience represented by our operating personnel is one of the reasons why Lawndale customers can be assured of a high standard of quality in their products.

Also, at Lawndale all orders are handled promptly upon receipt in order to guarantee maximum service to manufacturers who have a finishing problem.

For quality porcelain enameling, prompt service, and the right price, phone or write to —

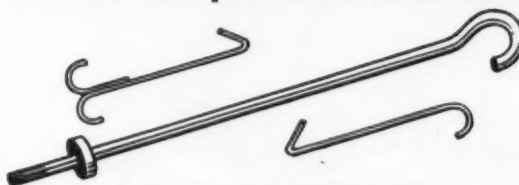
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→ from Page 68

pickle rooms by centrifuging should be an effective step forward in cleaner tank operations. The plant in which the tests were conducted has an unusually well controlled setup, and for this reason it is anticipated that in many plants the results of the system may be even more effective."

Edison Electric Institute 15th sales conference

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prize for its successful promotion of domestic electric ranges.

In Class III, Detroit Edison Company, Detroit, received first prize for the best promotion of electric water heaters.

In Class IV, West Penn Power Company, Pittsburgh, was awarded

first prize for its achievements in promotion of commercial electric cooking.

McCall home service awards

Mrs. Lucille Ramirez, home service director of Washington Water Power Co., Spokane, received the award in Division A (for companies with more than three persons in home service department) of the Laura McCall Home Service Awards for her company's achievements in home service operations during 1948.

In Division B (for companies with not more than three home service personnel), Miss Margaret Schneider, home service director of Wheeling (W.Va.) Electric Co., received the award.

In Division C, three awards for members of home service departments whose ideas best contributed to the

advancement of homemaking through use of electrical appliances went to: Miss Marguerite Fenner, home service director, Pacific Gas & Electric Co., San Francisco; Miss Elizabeth Parker, home service director, Georgia Power Co., Atlanta; and Mrs. Kathryn Spencer, home service advisor, Indianapolis (Ind.) Power & Light Co.

Named in memory of Laura McCall, for many years the head of McCall's Magazine, the awards were established by the magazine to help encourage the advancement of modern homemaking through electrical living, by giving public acknowledgment to outstanding home service work and to stimulate advanced thinking by individual home service representatives.

Third international lighting exposition and conference

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the order regardless. Another is sales with a view to creating customer satisfaction—business that will come back tomorrow."

Merit award competition

In the Merit Award Competition, presentation of 220 winners of Gold Seal, Merit with Distinction, and Merit Awards was made by R. D. Bradley, chairman of the Merit Award contest committee, and Carl Zersen, chairman of Merit Award judges.

One of the Gold Seal winners in the class for owners and users of industrial and commercial lighting was Robert S. Hoffman, of Perfection Stove Co., Cleveland, Ohio. The presentation was made for exceptional press work and steel storage lighting.

Among the Merit Award winners were Duncan Preston, of Detroit Edison Co., for lighting a paint spray room; James H. Riisness, of Omaha Public Power Dist., for lighting a production line; and R. G. Geyer and W. F. Carson, Public Service Company of Northern Illinois, for lighting a machine and metal fabricating shop.

For the first time at any Lighting Exposition, all of the winning entries were displayed in a Gallery of Merit Awards in the exhibition hall.



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Modern—Completed in 1946

Located in S. E. Pennsylvania, near steel centers. Capacity 200,000 sq. ft. per month. Set up for firing cast iron and sheet steel.

Designed for continuous flow of materials. All equipment new. Automatic continuous operation conveyORIZED spray and drying unit for flatwork—4½ ft. wide by 8 in. high. 2 firing ovens thermostatically monitor controlled, oil fired. Drying ovens continuous conveyORIZED type, oil heated. Large pickling room with overhead conveyor system. Modern wheelabrator for blasting cast iron. Modern frit mill. Six spray booths for individual parts.

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